The Builder.

No. CCXXXI.

SATURDAY, JULY 10, 1847.

WE have an especial interest in the character, conduct, and reputation of builders. The designation BUILDER, which we bear, includes, rightly thought upon, a large portion of society. Every arranger, inventor, artist, poet, is a BUILDER: some build up fine thoughts, others fine fortunes or a noble reputation; and to all these, in their turn, our publication appeals. The term is, indeed, wide spreading; applying, not to speak irreverently, even to the Creator, who is himself called the GREAT BUILDER.

When we said at the commencement, however, that we had an interest in the character and reputation of builders, we meant builders, specially so called,—the constructors of our houses, churches, bridges, and palaces; an important and numerous body of men, in whose support, advancement, or defence, collectively, we are always ready to exert ourselves, whatever remarks we may feel it necessary to make on isolated occurrences or individual members of the body.

A monthly periodical, of high standing, has recently admitted into its pages some very vulgar abuse of the class in question,—abuse founded on ignorance and smartened up with malignity. The writer politely says:—

"There is nothing drier and more unprofitable under the sun, nothing more nearly approaching to a state of addle, than a builder's brains. Your regular builders (and, indeed, not a few of your architects) are the sorriest animals twaddling about on two legs; mere vivified bags of saw-dust, or lumps of lath and plaster, galvanised for a while, and forming themselves into strange, uncouth, unreasonable shapes. A mere 'builder' has not two ideas in his head; he has only one; he can draw only one 'specification,' as he calls it, under different forms; he can make only one plan; he has one set of cornices always in his eye; one peculiar style of panel; one special cut of a chimney. You may trace him all through a town, or across a county, if his fame extends so far: a dull repetition of the same notion characterises all his works. He served his apprenticeship to old Plumbline, in Brick-lane; got up the *Carpenter's Vade-Mecum* by heart; had a little smattering of drawing from Daub the painter, and then set up in business for himself."

He here confounds architects and builders; but he afterwards treats the former to a special dose; singling out, it is true, one of a class, and not, as in the case of the builders, abusing the whole body without exception:—

"As for Triangle, the architect who built the grand town-hall here, the other day, in the newest style of Egyptian architecture, and copied two mummies for door-posts, and who is now putting up the pretty little Gothic church for the Diocesan Church-and-Chapel-Building and Pew-Extension Society, with an east window from York, and a spire from Salisbury, and a west front from Lincoln—why, he is the veriest stick of a designer that ever applied a T-square to a stretching-board. He has studied Wilkins's 'Vitruvius,' it is true, and he has looked all through 'Hunt's Tudor Architecture,' but his imagination is as poor as when he began them; he has never in his life seen one of the good buildings he is pirating from, barring St. Paul's and Westminster Abbey; he knows nothing finer than Regent-street and Pall-mall, and yet he pretends to be a modern Palladio. It will not do, all this sham and parade of knowledge; we want a new generation, both of architects and builders, before we shall see any thing good arising in the way of houses—but as this new progeny is not likely to spring up within a few days, nor even years, we may as well buckle to the task of criticism at once, and find out faults, which we shall leave others to mend."

The writer then proceeds to make out his case against the poor architects and builders, by pointing out these faults, the majority of which, as he admits in his progress, are the faults of employers, and of employers alone. Does the builder of a country squire's mansion (to such he is referring) recommend thin walls instead of thick; a cheap, small, trumpery structure, rather than a sound, well-finished, costly residence? A reply to the question must be unnecessary. Such a house as the writer recommends, the employer remarks, "is horridly expensive! Why, a house built after this fashion would cost three times the amount of any one now erected upon the usual specifications!" and our critic replies, "Of course it would. Materials and labour are not to be had gratuitously; but then, if the house costs three times as much, it will be worth three times more than what it would otherwise fetch, and it will last more than three times as long." No doubt of it, we echo. But how does this prove our "regular builders are the sorriest animals twaddling about on two legs; mere vivified bags of saw-dust, or lumps of lath and plaster, galvanized for a while?" How does it shew that there is "nothing drier or more unprofitable under the sun, nothing more nearly approaching to a state of addle, than a builder's brains?"

We have not quoted this foolish tirade because we thought it needed contradiction, but simply as affording us an opportunity to assert what we honestly believe to be true, namely, that our builders, as a body, are an intelligent, shrewd, and able set of men, capable of carrying out in a perfect manner works of any magnitude. We are not speaking now merely of the Cubitts, Peto, Grissell, Baker, Piper, Jackson, Kelk, Hayward, or a score other men, who stand at the head of the list, but of the body generally; and we are quite satisfied by long experience, that what we say is correct. The enormous extent to which our engineering works have been carried, the millions spent in the construction of railways, bridges, stations, &c., have, further, led men of education and capital into practical operations, who before confined themselves to devising and superintending. The builders of to-day are a very different set of men from the builders of thirty years ago. There are amongst them many sharp, and even scamping practitioners, but few whose brains are in "a state of addle," or who can be justly considered as "vivified bags of saw-dust," or "galvanized lumps of lath and plaster."

The want of skill amongst certain classes of our operatives, the badness of much of our construction, and the causes which have led to these deficiencies, are different matters requiring separate consideration. It is our aim by spreading abroad knowledge, to lessen these evils; and if we may venture to believe statements often made to us, considerable success is attending the effort. We see the course plainly before us, and have no fear for the future.

Amongst other points to be urged is, the maintenance of a proper feeling between masters and their operatives; and under this head we are led to give here the substance of the memorial, addressed by the carpenters and joiners to their masters (to which we alluded last week), because of its good tone and propriety of diction:—

"We have long witnessed, and been participators in, numerous evils, arising from the very limited time and unseasonable hour that is left to us to expend our weekly earnings, for the benefit of ourselves and those dependant upon us for subsistence and support. These evils with their inevitable consequences, physical, mental, and moral, we deeply deplore and seek to remedy; and earnestly hope to meet with like sympathy from you.

We therefore have been induced to solicit you to grant us the privilege (without diminution in our wages), of leaving our work at four o'clock* on Saturdays, which will reduce our hours of labour to 58½ per week.

In making this request, we would direct your attention to the fact, that this privilege has already been granted by employers in various parts of the country, and also to several trades in the metropolis, and has been found to operate most beneficially both to employers and employed; and it is our earnest conviction that all measures which manifest a regard for the well being of the workmen, tend also to the interest of the employer.

We also venture to hope that this mode of making known our wishes may meet with your cordial approval, as tending to conciliate and unite our interests, and that in future all differences between employers and employed may be settled in an amicable manner, without resorting to such injurious measures as strikes.

The trade in general, take this opportunity to express their gratitude to those employers who do not detain their workmen in waiting for their earnings, beyond the hour of leaving work, and earnestly impress upon all others to follow such admirable examples, feeling certain that they will be fully repaid in the increased satisfaction and good feeling of their workmen.

In conclusion, we now leave this memorial in your hands, trusting that it will meet with your favourable consideration and early attention, and that you will reciprocate the friendly spirit in which it has been presented."

We support the request, and are satisfied that the masters will lose nothing by granting it.

In connection with the welfare of the operatives, we would draw attention to "The Builders' Benevolent Institution," founded for the purpose of affording relief to persons connected with the building trades, and which seems well entitled to the support of all who have men working under them.†

A SPHERICAL CHURCH.

THOSE who recollect how much Mr. Goldicutt's design for the Nelson monument was criticised, would be ill-prepared for another project, lately published. This is no less than a design for a church in the form of a globe, supported by kneeling figures. The account of this "religious monument in a sphere" is prefaced by some observations, perhaps intended as a preparation for the system, against the shock which the sudden administering of so huge a pill would otherwise occasion. They partake much of the character of those with which what we should call an enormous hoax, is ushered in every where. When we find an argument commenced with "it is an undoubted fact," we do the reverse of what is intended, and examine. The result generally shews a positive untruth. We do not say quite so much of the observations alluded to, although they are not conceived independently, and with a clear view of the circumstances, but are influenced by the disposition mentioned. They are indeed, in a great measure, founded in fact. "Never," says the writer, "had any century a more marked tendency than ours to emancipate itself from opinions and rules transmitted by the past. Philosophy, politics, science, industry, literature, have manifested to a great extent this need of independence. The fine arts themselves are directed into new

* Not three, as stated last week.

† An advertisement of its first general meeting will be found in another column.

channels." Now, all this may be true under one aspect.

It is almost impossible to characterize the present century by any one tendency whatever. The diffusion of knowledge, whether it be by new discovery, or research into the discoveries of the past, may be its most remarkable characteristic. But such a postulate as that above, which would receive immediate assent from many, would appear a positive error to others, because irreconcileable with their own pursuits; and cannot be received as of sufficiently general application, at least if painting and sculpture be included. These arts are as much under the dominion of the past as that of architecture; in Germany, painting is, perhaps, more so. The writer continues:—"But by a strange anomaly, whilst painting and sculpture, which serve to express the constant and unalterable forms of animated nature, became obedient to this want of innovation, it seems that architecture alone, called to give to inert materials variable forms, changing without end, can express itself only with the aid of antique conceptions!" We have long since pleaded, that this common accusation against the modern practice of architecture, was not made with due consideration for the comparative state of other fields of ingenuity, and however we are able to defend the unquestionable lack of invention in modern times, common fairness requires that the state of architecture should not be estimated without a comparison with other branches of ingenuity, and a correct estimate of what may have always been, and may really be, inseparable from its existence. We believe that architectural forms are impressed upon the recollection, as they are not in painting and sculpture, and that the opprobrium of adherence to precedent might be attached to works both of literature and art, where its presence is scarcely suspected by ordinary observers. The error of architectural critics is, that they forget, that *originality* is not necessarily a merit. One of the most original conceptions in architecture was placing the capitals of columns where the bases should be, yet that did not raise the value of the work of art. Thus it is, that projects such as we are about to describe, become the admiration of those who know a little, and a supposed cause for shame in those who follow in what is called—the beaten track;—skill in architecture is not necessary to produce a hundred such inventions.

With this desire of avoiding any resemblance with buildings devoted to pagan worship, the Count Cesare della Chiesa di Benevello, of Turin, has projected a building, which, although of so singular a character as to merit particular description, does not, we say, merit the rank as a work of art, which seems to be claimed for it. The building, if it were capable of being executed, would consist of a vast globe, covered with gilt metal, intended to symbolize the universe, suspended in the air, or supported only by eight colossal cherubim, in kneeling posture, ranged in pairs. In the intervals between each couple of figures, are placed the great doors and the steps of ascent, the whole being raised upon a lofty stylobate, elevated upon an extended superstructure, which is ornamented with a bas-relief, representing the history of humanity from its commencement to its end. The stylobate is reached by three staircases, consecrated to the three divine virtues. At the four angles of the lower stylobate are placed figures in bronze, emblematic of the four evangelists, moveable upon pivots, so that by their wings they will turn with the wind, and, says the account, give animation to the building by their motion. The four staircases, already spoken of as giving access to the building, are consecrated to the four cardinal virtues. On the summit of the two intersecting arcs which support them, the pavement of the church is placed a little above the lowest part of the globe. In the centre of the space is the altar; and from it a column can be raised to a considerable elevation, supporting a tabernacle in gilt bronze. The incense introduced within the cavity of this column would escape from the censers of the angels, grouped around the Divine image, at the summit. The choir for the priests is disposed around the central altar, a communication being provided between this station and the sacristies beneath. Round the sphere, to nearly half its height, are disposed the benches for the people, in concentric ranges, surmounted by a range of galleries. The upper hemisphere represents the heavens spangled with stars; and there are three ranges of gilded figures, representing the three principal hierarchies, encircling it. At the summit of the sphere is an opening for light, glazed. There will be represented, says the account, the vigilant eye of Providence, shedding rays tinged with the seven colours of the rainbow, thus recalling to all the faithful the sublime words of Genesis, the first pronounced by the eternal power over chaos, "Let there be light." The segment of the sphere beneath the altar, is reserved for the organs. They are so disposed, that the sound will penetrate into the church by four openings around the altar, and the organist has also the means of directing the sound through the instruments of the celestial quire above, so that he can, turn by turn, depict the groans of hell, or the harmonious anthems of the blessed. Two ambos, and two baptismal fonts, or two confessionals, in the intervals of the four doors, will complete the interior distribution. Bells are placed near the level of the tribune, or gallery,—supports being carried up from the kneeling figures which bear the globe. The Count Benevello thus argues in favour of his design:—"If material and terrestial things ought to have an influence upon our minds, to recal them to the sublime and incorporeal, it seems to me that this would be the effect of this temple suspended in the air, enriched by so many symbols of our faith, and so many colossal works of sculpture." * * "When there is joined the mystery of the light with varied tints suffusing the spectacle, the alternation of harmony sometimes arising from the recesses of the earth, and sometimes gushing from the heights of heaven, perhaps it would not be an error on my part to think, that this temple would surpass in majesty and intensity of sensation, the ordinary character of our religious edifices, whether those in which the view is interrupted at each instant by columns and pilasters, or in which the sacred words, always uncertain and confused, reach with difficulty a small number of auditors, or, in fine, where often nothing can be found to recal any idea of the sanctity of the place, if at all times the appearance does not occasion ideas which are nothing less than profane."

In some remarks, which are appended to a notice of this design, by a French contemporary, we find several judicious comments upon this singular project. It is feared, that the eyes of the assembly would be more occupied in watching the motions of the priests, or the different effects of the light, as perchance the green ray might fall upon the face of a pretty woman, than attending to the words of the divine office; and that the circular arrangement is the worst that could be chosen. Some fear may also be expressed at the possibility of producing a structure better adapted for a swallow's nest than for a church; and should *one* support fail, the whole assembly might bowl away in a novel, but very unpleasant manner. At least, the appearance of insecurity it would be hardly possible to overcome; and the long steps of ascent would be especially inconvenient to old and young. Nevertheless, to ourselves, although the general design does not appear to merit any higher encomium than we have passed upon it, some of its features, and some of the arrangements of the interior, seem to be curious, if not praiseworthy, and suggestive at a time when opinions differ as to the best arrangement for ecclesiastical edifices.

Glasgow and West of Scotland Association for the Promotion of the Fine Arts.—On Monday week, a meeting of the members of this association was held in Carrick's Hotel. The secretary, read an interim report of the committee of management. It proposed that the name of the association should henceforth be "The Glasgow Art-Union," and that the system of money prizes should be adopted. The prize picture of last year—"Prince Charles Edward" had been engraved, and was in course of distribution to each member. The rules and regulations, drawn up from those of the London Art-Union, were then submitted, as also the draft of a petition to the Privy Council applying for license. The report, the regulations, with a few verbal alterations, and the petition, were agreed to.—*Glasgow Reformers' Gazette.*

THE GRANITE QUARRIES OF EGYPT.*

The granite quarries of Syene remain a lasting proof of the greatness of ancient Egypt. At that place (now called E' Souan) the valley of the Nile is traversed by a range of granite rocks, which rises in some places to a height of several hundred feet, forming that barrier in the course of the river which is the cause of the cataract of E' Souan. On either side of this range extends the bare *Sahara*. The sole elements of the scene are sky and granite. Exposed to the full action of the weather, these rocks are in a state of continual decomposition, and by that process have formed vast heaps of siliceous sand, composed of the crystals of granite in all stages of comminution. Enormous piles of boulders lie about in every direction, but principally in the bed of the river, where the rock appears to have given way to the force of the water, and crumbled down into these fragmentary masses. The rocks lying on the east bank of the Nile are the most compact and solid, and it is here that they have been quarried of those huge blocks which were used by the ancient Egyptians for obelisks, colossi, and other architectural works. These quarries extend for several miles along the granitic formation. The cuttings do not penetrate deeply into the substance of the rock, but in whatever part the surface is firm, and without seams, it will be found to have been cut into, and turned to advantage.

Even at the present day, after a long lapse of ages of total abandonment, the operations of the workmen may be traced with the greatest ease. In one part, the fresh surface of the rock shews distinctly where a block of stone was removed; in another, you meet a large obelisk, half detached, and to appearance as if just fallen from the perpendicular, like the less fortunate of Cleopatra's Needles at Alexandria: here are long lines of marks produced by the wedges of the workmen, and there heaps of chips, the result and refuse of more minute operations. Without difficulty you might fancy that the quarry-men were but absent at a meal, and would return to resume their work.

The mode of separating the blocks was very simple. Along a certain line of surface, a row of wedges was wrought, at intervals, into the substance of the rock, which, after being advanced to the necessary depth, were struck with heavy hammers; a rent was thus formed in the line of operations, and the superincumbent mass, being detached, was easily separated by proper levers. This is the very plan now adopted in our own quarries, with the exception, that, in those I have seen in this country—for instance, at Peterhead,—the wedges are not applied to the rock *in situ*, but to large masses, which are first detached by blasting. This may suit the Scotch granites, which have a much greater number of seams than the true Syenite; but it would never produce an obelisk, even on the banks of the Nile.

The most remarkable circumstance connected with the quarries is, that the surface of the rock exposed in the quarrying is hardly at all discoloured by the long exposure it has been subjected to, and when compared with a freshly-broken bit of rock, presents the full rosy colour of the feldt-spar. So striking is this, that on seeing the two compared, one naturally asks himself if these can possibly be the quarries wrought by the ancient Egyptians—that people whose history almost extends beyond the bounds of the legitimate historic age! As in the case of the tombs of Baben-el-Melook, and most of the earliest monuments of Egypt, the finger of time seems to have respected the works of this extraordinary people; it is only where sacrilegious man has been able to interfere, that desolation has overtaken their all-but-everlasting works. Nearly four thousand years have fled since the Augustan age of ancient Egypt; its civilization, its dynasties, and its very people have disappeared from the face of the earth. But these eternal rocks remain to attest the power and greatness of that kingdom, and to demonstrate to him who is willing to learn, that, although to the great bulk of mankind, forty centuries may be all but inconceivable, it is but a drop in the ocean to the countless ages through which has rolled on this our terrestrial orb.

In order to be able to draw any deductions

* From a Journal by Dr. J. B. Mitchell, still unpublished, of a series of travels, with Lord Eastnor, in the Turkish and other dominions.—Egypt, Syria, Palestine, the isles of ancient Greece, &c.—in the latter accompanied also by Mr. Layard.

from the appearance of the Syenite quarries, regarding the progress of discolouration and disintegration, it is necessary to determine the time when they were worked. I do not know that there is any direct historic evidence on the subject; from a number of considerations however, it would appear to be pretty certain, that the quarries of Syene have hardly been in use since the early dynasties of the Pharaohs. The purposes to which the Syenite granite was chiefly applied, were the forming of colossi and obelisks, and the lining and casing of pyramids and some of the propylæa of the temples. Now all the colossi that are known are of very ancient date. The principal ones bear the names of Amenoph III., corresponding to 1430 B.C., and Rameses II., to 1350 B.C. The greatest number of the obelisks known, are works of the Pharaohs of the Rameses dynasty, from 1400 to 1300 B.C. The obelisk at Heliopolis, is inscribed with the name of Osirtasen I., who lived about 1900 B.C. There are one or two obelisks which are exceptions in regard to their antiquity, if we may judge by their less perfect style of workmanship and the absence of any ancient name; but these, in all probability, are old Egyptian monuments, which have been dressed over again and reinscribed in Greek or Latin for some special purpose. None of these spurious-looking obelisks exist in Egypt—that which stands in the Atmeidan at Constantinople, and one or two at Rome, as for instance that near San Giovanni in Laterano, are of this description. The great pyramids which were cased externally with granite, as well as lined throughout the passages with the same material, are of the time of Suphis—fully 2000 years B.C.—and the immediate successors of that monarch. The only two temples in which I remember to have seen granite propylæa, are one at Karnac by Osirei I. 1335 B.C., and that of Medinet Haboo, by Rameses III., about 1380 B.C.

Besides these facts in favour of the supposition that the quarries of Syene were wrought principally in the Pharaonic ages, we have negative proof in support of this view, in the fact that no granite was used in the construction of the temples raised under the Greeks and Romans, and no colossi or original-looking obelisks have been discovered of Ptolomaic or later date. In further support of this opinion we find the names of early Pharaohs cut on the rocks in the neighbourhood of the quarries; as those of Thothmes III., 1495 B.C., and Psamatik I., 664 B.C. Indeed, it stands to reason that the greatest works of a people should be constructed during the period of their greatest power and prosperity, which undoubtedly was that of the Rameses dynasty.

From these considerations, then, it would appear that the quarries of Syene were wrought chiefly, if not exclusively, in the days of the Pharaohs, and, consequently, that the surfaces that were formed in the process of quarrying, and which we have an opportunity of examining at the present day, are of very ancient date.

It is easy to distinguish, by the marks of the tools, the surfaces of the rocks which have been exposed by the operation of quarrying; but they are, moreover, very readily recognised by the marked difference of colours which they present, when compared with the surfaces which have remained untouched. The latter, far from shewing any of the pink colour characteristic of Syenite, are covered with a dark brown crust of decomposing crystals, in some instances so loose as to be easily removed by a slight blow of a hammer. The quarried surfaces, on the contrary, are fresh, clean, and compact, and retain the vivid pink of the felspar intact. In these respects they agree with the chips, which we must suppose to have been formed at the same time. So very fresh is the colour of some of these surfaces, that it is only on comparing them with a newly-broken specimen that their somewhat darker hue is distinctly visible. There is hardly any difference of colour among the quarried surfaces.

We have thus shewn that the quarried surfaces must be about 3000 years old at least, and that during that great space of time they have hardly at all been affected by the action of the atmosphere, while the natural surfaces have been greatly acted upon. The obvious deduction from these facts is, that an immense series of ages must have passed away since the rocks of Syene were brought into the position which they now occupy. It is quite impossible to say what length of time has elapsed; estimating it by the very slow progress of the discolouration, it might be 10,000 years or it might be 100,000. But even these are moderate numbers, compared with what we should be obliged to give, were we to bring into comparison with the surfaces of the quarries the decomposed granite which covers the ground far and near to a great depth, and which must all have originally formed part of the solid rock. When a surface exposed for 3,000 years has not in the very least given way to the influence of the atmosphere, what an inconceivably vast period of exposure was necessary to wear away many feet of solid granite, and especially as that formation, as it occurs in Egypt, is one of the most durable of compound rocks, from its containing so small a quantity of alkaline matter and protoxide of iron.

The above remarks receive a striking corroboration from some facts regarding the discolouration of the rocks in the bed of the Nile at Philœ, and the immediate neighbourhood of the cataracts of E'Souan.

THE BUILDERS' SOCIETY AND THE REFEREES.

Sir,—I take leave to forward to you the following copies of correspondence between the Committee of the Builders' Society and the official Referees and Registrar, and to request that you will give them early insertion.

I am, Sir, your most obedient servant,

THOMAS PIPER, Jun.

At a meeting of the committee of the Builders' Society, held at the Freemasons' Tavern, Great Queen-street, on Monday, the 28th ult., it was resolved,—

"That in pursuance of the suggestion contained in the letter of Mr. Symonds, of the 17th ult., copies of the correspondence between this committee and the official referees and registrar be sent to the editor of THE BUILDER, with a request that he would insert them as early as convenient."

173, Bishopsgate-street Without, 2nd June, 1847.

Dear Sir,—I am desired to forward for your information and that of the official referees, copies of the report of the Builders' Society upon the bill now before Parliament for amending the Buildings Act, and to say that a copy has been sent to Lord Morpeth, and an interview asked with him on the subject.—I am, dear Sir, yours faithfully,

THOMAS PIPER, Jun., Hon. Sec.

A. Symonds, Esq.

Office of Metropolitan Buildings,
6, Adelphi-terrace, Strand, June 4th, 1847.

Sir,—With reference to the report of the committee of the Builders' Society upon the bill for amending the Metropolitan Buildings Act, which was transmitted by you yesterday, I beg on the part of the official referees and myself to return our acknowledgments, and at the same time to observe that some of the views stated in that report are founded upon misapprehensions, which it appears to us might have been obviated by some previous communication with this office.

I may mention one instance in the observations on the clauses 4 and 5, in which it is stated that "it would be desirable that all decisions should be registered, indexed, and be accessible, as some public documents already are, to the public, upon payment of a nominal fee." This is already done to an extent, I believe, not attained in any other office, and the fee of sixpence per volume may be deemed nominal, since all the awards on the same subject are included in the same volume, so that without any labour or research, whatever has taken place upon the same subject may be at once seen.*

It is to be regretted, however, that the public have scarcely availed themselves of the facilities of this office, and with a view to extend them, and literally to bring home the information to the builders and other parties concerned, the provisions of the clauses referred to have been recommended; and if Parliament should think fit to adopt them, I hope to be enabled to explain and make familiar to the public the bearings of the various cases, and thus practically to develop the meaning and application of the law, and render it less and less necessary to refer matters to the official referees.

I may take this opportunity of observing, that by an arrangement I have made in the office, it is the duty of the surveyor to give every assistance to the public in preparing their requisitions and applications, and I am in hopes that when this part of the arrangement is put on a proper footing, much of the difficulty which the public have experienced will be obviated.—I have the honour to be, Sir, your obedient servant,

ARTHUR SYMONDS,
Registrar of Metropolitan Buildings.

* This has been distinctly stated in THE BUILDER more than once.—ED.

16th June, 1847.

Sir,—I am desired to thank you for your polite communication in acknowledging the report of the Builders' Society Committee upon the proposed bill for amending the Buildings Act, and to say, that it will be acceptable to the society if you will be so kind as to point out what those views are "which are founded upon misapprehensions, which might have been obviated by previous communication with your office."

The society desire me to forward to you a copy of the bill, interleaved with the alterations suggested by them to Lord Morpeth, in order that you may distinctly understand what it is that they have proposed.

In consequence of your note, it was stated to Lord Morpeth, that the suggestion of increased publicity to the awards and facility of reference had already been anticipated, and that, therefore, the remarks made in that respect might be considered to have been met. May I be allowed to inquire whether it would be acceptable to you, that your letter of the 4th June should be made public beyond the limit of the Builders' Society, in order that it may be generally known how complete your arrangements are for the public becoming acquainted with the awards and decisions of your court.—I have the honour to be, Sir, your most obedient servant,

THOS. PIPER, Jun., Hon. Sec.

17th June, 1847.

Sir,—With respect to the report by the committee of the Builders' Society upon the bill now before the House of Commons, I beg, on the part of the official referees and myself, to acknowledge the receipt of your letter of the 10th instant relative thereto, and to inform you, that the official referees feel, that it would not be possible for them to encounter the loss of time and labour of detailing in writing such explanations as a compliance with your request would involve, although they think that explanations might have been afforded at an interview with the committee before they had framed their report. There does not appear to be any objection to the publication of my letter, or the substance of it; but, on the contrary, it is desirable that the committee of your society should adopt any means which they think proper, to inform builders and the public of the arrangements which have been made at this office for facilitating the transaction of the business.—I have the honour to be, Sir, your obedient servant,

ARTHUR SYMONDS,
Registrar of Metropolitan Buildings.

INFORMATION UNDER THE BUILDINGS ACT.

MAGISTRATES AND THE REFEREES.

It will be remembered that reports have appeared at different periods in THE BUILDER, respecting an information promoted by Mr. Boulanger, against Mr. Sugden, a builder, for erecting houses near to a dangerous manufactory. The proceedings in that case are still pending. Subsequently another information has been laid by Mr. Hesketh, the district surveyor, against the same premises, under another clause of the Act, for the illegal width of the street or alley, and an award was received from the official referees, declaring that the aforesaid buildings had been erected contrary to law. The award was followed by the usual certificate, and under its authority Mr. Hesketh applied to the sitting magistrate at Southwark police office (Mr. Secker), to give effect to the certificate of the official referees.

Mr. Petersdorff, the barrister, appeared on behalf of Mr. Sugden; Mr. Hesketh's case was unsupported by counsel.

Mr. Hesketh stated his case, and produced the original award, as made by the referees. Mr. Petersdorff took an objection to its reception, and contended that the Act only required that a copy of the award should be produced as *prima facie* evidence. This led to a long discussion, when Mr. Secker determined that it was good evidence, as it was absurd to suppose that a copy could be received and an original document rejected. Mr. Hesketh was then cross-examined by Mr. Petersdorff, in which he denied most positively that during the progress of the building he was ever informed that Mr. Boulanger had a fourteen years' lease of his premises. Several witnesses were then examined to show that the line of street or alley was laid out before the Buildings Act came into operation, and that houses were commenced at each end. When the street was

originally laid out, it was intended that Mr. Boulanger's should be removed, but lately he had increased his terms so that they could not be listened to.

Mr. Petersdorff then addressed the bench, and asked seriously whether there had been such a violation of the Act as to warrant the destruction of the seven houses named in this information. The legislature, he contended, never intended to interfere in any way with buildings in existence or in progress, as the Act has no operation on streets, buildings, or matters referring to buildings commenced before 1845, and he was not aware to what extent they were required to be completed to bring them out of the reach of the operation of this Act. He did not think it was necessary that every house should be commenced to be protected, for he might assume for argument that No. 2 was begun, No. 4 begun, No. 3 not touched, and No. 1 considerably advanced: in such a case, he would ask, was the entire line to be destroyed? The legislature never entertained any thing so absurd.

Mr. Secker took time to consider his decision, and on the re-assembling of the parties on Monday he delivered his judgment. He was of opinion that the line had been laid out before the passing of the Act, and that the alley or street was fit for use by the public having passed over it. He, therefore, felt bound to dismiss the information.

This decision, consequently, nullifies the whole proceedings of the official referees.

ARCHITECTURE AT UNIVERSITY COLLEGE.

The distribution of the prizes at University College took place on the 1st instant. Sir H. De la Beche was in the chair. Professor Donaldson had, during the session, which commenced in the middle of October, 1846, and had continued until the middle of June last, visited with his classes the British Museum, St. Paul's Cathedral, and Westminster Abbey; describing to his pupils the antiquities in our national collection, and the architectural and structural points of the two last named edifices; pointing out especially the construction of the various parts. The series of questions which the classes had to answer, embraced all the subjects treated of in the course of the 110 lectures delivered at the college. The prizes were awarded as follows:—

FIRST YEAR'S COURSE.

Fine Art.—Charles Poland, 1st prize and 1st certificate; Unknown, 2nd prize and 2nd certificate.

Science — Construction.—H. Darbishire, 1st prize and 1st certificate; Charles Poland, 2nd prize and 2nd certificate; Unknown, 3rd certificate.

SECOND YEAR'S COURSE.

Fine Art.—W. Tarue, 1st prize and 1st certificate; G. B. Smith, 2nd prize and 2nd certificate; J. W. Mc Kenzie, 3rd certificate.

Science—Construction.—G. P. Boyce, 1st prize and 1st certificate; W. Tarue, 2nd prize and 2nd certificate; G. B. Smith, 3rd certificate.

It had been unusual to award second prizes, but the professor was so well satisfied with the replies second in order, that he was permitted to add another prize.

From some irregularity, the pupil who obtained the 2nd prize in fine art, first year, and the 3rd certificate for science, had omitted to give in his corresponding number into the office, so that they could not be awarded.

The professor is anxious that the author of the papers numbered 54 should call upon him.

We learnt with satisfaction that the class of architecture at University College had increased in numbers one-half beyond those of the preceding session.

The City.—The site of a house in Newgate-street, the rent of which has fallen in, is to be appropriated to widening the street. A petition to Parliament against intramural burial has been agreed to. Some city ground at Holloway is to be appropriated to the erection of a new reservoir. The salary of Mr. Bunning, the clerk of the city's works, has been increased to 2,500*l.*

NOTES IN THE PROVINCES.

The incorporated church building and repairing society have granted money towards the rebuilding of the churches of St. Dogmell's, near Cardigan; Llanfyhangel-y-Pennant, near Tremadoc; and Llasgoed, near Carmarthen; towards the erection of churches at Sighill at Earsdon, Baldhie near Truro, St. Jude's in Bristol, Pimlico, and Lyne at Chertsey; and for the enlarging, &c. of churches at Chudleigh, Thorpe, Northallerton, Tichbourne, Chignall, Smealley, and Stokenchurch.——At the Suffolk quarter sessions instructions were lately given either to repair East Bridge, or build a new one, at a cost not exceeding 200*l.* It is also proposed to rebuild St. Olave's Bridge by loans on rates exhaustible in fourteen years. The plans and specifications were lodged. Messrs. Perry and Garner's tender of 555*l.* for a temporary bridge was accepted by the committee, and the contract for building the permanent bridge was ordered to be prepared on receipt of tenders.——Plans by Mr. Round, architect, have been selected for a church at Penge, near Sydenham, Surrey, for the use of the watermen's almspeople and others. Her Majesty the queen dowager has presented a donation towards the erection.——The lowest tender for the masonry and brickwork of the proposed improvement of St. Mary's churchyard, Southampton, was that of Mr. W. Morse, builder, and for the iron-work, that of Mr. J. Churton. They were a few pounds above the surveyor's estimate, and more than the fund subscribed.——Some planks on an iron frame, supporting the pavement of the Worcester bridge, have proved to be in a rotten state, by the sudden sinking of one or two of the flags. Our contemporary, the *Worcester Journal*, is looking to the safety of the public, both above bridge and below, in crossing these 'rotten planks,' till something better be substituted. ——The lamentations of the Tauntonians on account of the 'very dirty' and unhealthy state of their town and its bad drainage have not yet ceased, notwithstanding the mighty projects started from time to time in order to put a period to their existence. A recent correspondent of the *Somerset Gazette* attributes the defective drainage chiefly to the substitution of macadam in place of the old pitched causeway, on the 'crown' of which the higher-minded order of the ancestorial inhabitants of towns of old were wont to walk in stately majesty. The inconsiderable fall towards the river is also pointed to as a cause, but so long as the alleged want of general communication with the main drains continues, nothing like cleanliness or health need be hoped for.—— The foundation-stone of a new school-room, for the Cheltenham charity schools, was laid on Thursday week. —— Owing to the decay of the surface of the stone of which the Hereford Shire-hall is built, says *Felix Farley*, it has been found necessary to give it a coating of boiled oil. This plan of 'doing' the hall 'in oil' seems hardly to comport with the dignity and beauty of the Doric architecture, giving the building, as it does, a soaked leather aspect.——From reports read at the Herefordshire sessions, it appears, that repairs of several of the county bridges have been effected, and that others, particularly Little Hereford, Stretford, and Morbage bridges, are much in want of repair or improvement.——In a paragraph recently copied by our contemporaries of the newspaper press, it was stated, that "the Woods and Forests, which formerly promised the strand of the Birkenhead Docks, have now laid claim to the margin of the Wallasley Pool, on which the docks are erected," and that "the Government, also, which promised a subsidy of 50,000*l.* to aid the works, now states that it has not the requisite power; and consequently, the company has determined to close the works. The corporation of Liverpool," it was added, "have also put in a claim to the strand." It has since been announced, however, by the *Liverpool Herald*, that the docks have been re-opened, "the resolution moved by the chairman of the Dock Commissioners at their last meeting, having been found to be illegal," and that "the commissioners have taken the best steps they can to remedy the evil effects likely to result from it."——The foundations of the extension of the Manchester Royal Infirmary have been begun, and the ceremonial stone was to be laid to-day (Thursday).——The first stone of Trinity Church, Wicker district, Sheffield, founded by Misses Harrison, was laid on Friday last.—— Mr. Thomas German, of Preston, has given a thousand pounds for the erection of a tower and spire to the church of St. Peter's, in that town.——In a recent charge, Archdeacon Wilberforce stated that one-eighth of the churches in the East Riding of Yorkshire had been restored or rebuilt within the last seven years.——Our town council, says the *Newcastle Advertiser*, have evinced their sense of the importance of sanitary reform by taking steps for enforcing some of the most valuable clauses of the town improvement Act. An excellent precedent. ——The foundation-stone of the Wesleyan chapel and school-room at Witten-park Ironworks, says the *Gateshead Observer*, was laid on 24th ult. The proprietors of the works have presented the site and the stone: subscriptions received, about 100*l.*——Upwards of 500 workmen are now employed at the Sunderland docks, the several contractors working with energy at 'double shift,' to suit the tides. In a few days, says the *Sunderland Herald* the further letting of the excavation of the wet dock and half-tide basin, together with the building of the walls round the same, will require a further large number of hands. ——A joint-stock Water-work Company, according to the *Carlisle Journal*, is about to be formed at Penrith, on a report, by Mr. James Simpson, the engineer of the Carlisle Waterworks.——The Berwick barracks, according to the *Berwick Warder*, have recently undergone extensive repairs, in compliance with an order from the Board of Ordnance to that effect. ——Another of the Scottish granaries has given way at Craigie, Perthshire, under the enormity of the load of its accumulated treasures. "More granaries throughout the country have fallen within the last six months" says the *Edinburgh Register*, "than during the previous sixty years—certainly no proof of the scarcity so loudly asserted to exist in the land." Yet it was not from the weight of well-filled stomachs, that the Perthshire highlanders were brought down upon their marrow bones.—— The Town Hall of Linlithgow, was completely destroyed by fire on Thursday week. It is supposed that the burning rays of the sun ignited the old wood of the roof, probably, as suggested in another instance by a correspondent of our own, while the wood, so reduced to 'touchwood,' was in contact with iron made hot by the same means. Thus the necessity for a watchful repair of such old structures is always great, as the risk is imminent.——The average daily number of persons employed on the Relief Works in Ireland, during the week ending 19th June amounted to 60,288, and the total cost thereof to 28,835*l.* The road works were all stopped on 19th June, previously to new arrangements on a reduced scale.

DUTY ON BRICKS, PAPER, AND LIGHT.

Mr. Ewart, M.P., in the course of an able speech in favour of direct rather than indirect taxation, recently delivered, made the following remarks, to which too large a circulation cannot be given.

The duty on paper he held to be a most objectionable tax. Its levy cost much vexatious interference. An account, he believed, must be taken of the daily produce of the paper-manufacturer. The number of sheets in every ream must be given. Every ream must be labelled: every label must be written on. If the paper be afterwards destined for exportation, the label must be removed. All this was interference; and it was a tax of the most intolerable kind in this age, because it was *a tax upon time*. To tax the *time* of the trader, was (in his, Mr. Ewart's eyes) one of the greatest fiscal offences that could be committed. Yet, in all these little matters, the workman must attend the steps of the excise-officer. He believed that our paper-manufacturers were undersold abroad, notwithstanding that a drawback was allowed on the paper which was exported. This disadvantage he could only attribute to interference with the trade. If emancipated, it would probably expand into full freedom, like the glass-trade. Even now it had a latent tendency to do so. A manufacture of paper from straw had been

begun; and he believed that boxes, now made of wood, would frequently be made of paper, if our manufactures were unshackled. But there was, in his mind, an insuperable objection to this paper duty, and these paper fetters altogether. They formed a tax and a burden upon the literature of England. He believed that two-thirds of the paper manufactured were used for the purposes of printing. There was also this anomaly in the duty: much of our paper (especially the paper of which newspapers were made) was formed out of the sweepings of our cotton and flax-mills. There was no duty on these articles as raw materials; but they paid a duty when they entered the paper-trade. Turn cotton into calico, it was duty free; convert it into paper, it was taxed. The effect of the repeal of the duty on almanacks was an instance of the effect of repealing a duty upon literature, however lowly. But he held the mere duty on paper not to be so great an evil as the interneddling with the paper trade. If these domestic restrictions were removed, our language and our literature would naturally expand. He next turned to an impost on a common article of great and increasing importance—he meant the Excise-duty on BRICKS. In this case, as in the case of soap, there was no duty on the manufacture of Ireland. Indeed, comparatively, there was scarcely any duty in Scotland, since nature had provided Scotland with an ample supply of valuable stone. But where the duty did fall in Scotland, it was, by comparison, the more oppressive. This duty was originally imposed by Mr. Pitt, in 1784, to meet the exigencies of the debt created by the recent war with America. At first it extended to stone, as well as to bricks; but the stone interest was successful in its rebellion against the duty. Mr. Pitt was obliged to yield. He left the brick duty alone remaining; but he acknowledged the impolicy and partiality of its character. In fact, he maintained that this was, in the language of the Commissioners of Excise Inquiry, 'among the most objectionable of the duties of Excise.' Since the glass-duties had been abolished, how great had been the development of that most beautiful fabric! The window of every glass-shop indicated that science and art combined to improve and to embellish it. Few would suppose that there was a connection between the arts and the making of bricks; but he remembered that when it was asked in a committee (on the connection of art with manufactures, of which he was chairman, in 1836) why we did not make bricks of various shapes, as in the time of Henry VII. and Henry VIII.? the answer was, that the restrictions of the Excise prevented us. He found this evidence singularly corroborated by the valuable testimony of Mr. Wood, the chairman of the Excise Board in the last session of Parliament. That gentleman, in his evidence before the Committee of the House of Lords, on 'The Burdens on Land,' stated that some of the excise regulations on the manufacture of bricks had been relaxed, and that 'the consequence of this alteration was, that great facility had been given for making bricks of ornamental shapes, and enabling architectural ornaments to be made in brick, previously in effect prohibited.' He (Mr. Ewart) had no doubt that so ordinary a trade as the brick trade, when emancipated, would be made still further obedient to the purposes of art. He had limited the foregoing suggestions to duties of Customs and Excise. He admitted the injustice and impolicy of other duties also. The WINDOW DUTY was one of a most unequal and impolitic character. The insurance duty was a tax on the foresight of the parent and the resources of the family; and other duties were, in various ways, objectionable. But he principally assailed those duties which obstructed or choked up the sources and springs of labour.

TABLES FOR ESTIMATING EARTH-WORK.—Mr. Charles Sibley, son of the district-surveyor for Clerkenwell, and Mr. Rutherford, of Woolwich, have recently published an elaborate set of tables for estimating the contents, in cubic yards, of the earthwork of railways and other public works, which appear to have advantages over others, and will be found useful.* We shall take an early opportunity to look to them more closely.

* Longman and Co., Paternoster-row.

IMPROVEMENT OF SMITHFIELD MARKET.

WE have received, with the following, from a naval officer of high standing, drawings, exemplifying his proposal, but think it unnecessary to engrave them.

I would suggest that a platform be built on arches, occupying the whole extent of the present site, leaving a street, or road-way, all round, 60 feet broad. That the elevation be such as to allow of a piazza of shops all round, vaulted; that in the centre of the platform two or three, or more, arched ways should pierce the platform from side to side, of sufficient height and capacity to receive water-tight waggons on four wheels. That leading to the platform above there should be a sloping road-way at each angle, with balustrades; and that the platform be roofed in, in square compartments, open on all sides, supported on iron pillars; one-half of the space to be apportioned to the sale of cattle, the other half to the slaughter of them.

That each of the said compartments be floored with broad flags, laid in cement, the whole having a slope to a perforation of a foot square, corresponding to one of the central arches, under which a waggon, as before described, is to be placed, to receive all the droppings and offal of the cattle. That the waggons, when full, be removed by means of a railway landward, or a souterain railway, leading to the river, as the ground affords sufficient fall to conquer the *vis inertiæ*, when the waggons are once set in motion. Arrived at the river, the contents of the waggons to be delivered into barges, prepared to receive them on board at once, and their contents to be entered into the barges by a trap-door in the centre of the waggon. Empty waggons to immediately supply the place of those removed.

Advantages of the Proposed Plan.—1. All nuisances would be removed when once the cattle ascended the platform. 2. The air would cease to be contaminated, as all offensive matter would be speedily removed, and previously remain covered in waggons. 3. The meat, when ready for the market, would at once be received into the vaulted shops, and thus escape being shaken when carried over the pavement. The shops would be always cool, and from both these causes the meat would remain sweet much longer. 4. Business would be transacted much more expeditiously, and at less expense, nor would there be any interruptions from vicious characters. 5. The value of the manure, which at present runs to waste, would be such as in a short time to pay all expenses, and return a large revenue.

The above plan is not only applicable to London, but to all towns in the kingdom, and the offal thus made available as manure of the best kind, with little labour or expense.—A. D.

IRON TUNNEL OVER THE MENAI STRAITS.

A CORRESPONDENT of the *Mining Journal* calls for further investigation before the iron tunnel be put up. He says:—"According to my informant, its length is to be 460 feet, clear of the points of bearing—so that I presume the entire length cannot be far short of 470 feet; its diameter 30 feet, to be constructed with wrought-iron plates, varying from ¾ in. to ½ in. thick—therefore, supposing the average thickness to be ⅝, and including the needful *powerful ribs and stays to resist the vertical and lateral pressures and strains*, together with the interior framing and rails, I estimate its weight at upwards of 30 cwts. for every foot of its length, or about 700 tons. Now the depth of the tube is 30 feet, which is about $\frac{1}{14}$th part of its length, therefore, according to my machine, the strain by its own weight at the middle will be equal to 7½ times its weight—viz., 5250 tons—and suppose a train with the engine and load to be 100 tons, equal to 750 tons—together 6000 tons. According to Barlow's theory, the safe capacity to resist such a strain ought to be equal to 18,000 tons; and to Tredgold's, 24,000 tons. Now let us see what is the capacity of this projected tunnel, or tube:—The circumference is (say) 90 feet; the tension property in the lower half, 45 feet. Suppose the plates average five-eighths of an inch thick, it would give 7½ square inches on each foot; say, that each inch would sustain, before breaking, 20 tons, this would make 150 tons to each foot, which, multiplied by 45, gives a capacity of 6,750 tons! *so that its own weight, and the load, would, according to this calculation, produce a strain nearly equal to the breaking point.* Now, as wrought iron will begin to stretch at the strain of 10 or 12 tons to the inch, it must be manifest that little more than half its weight would produce a permanent set, and render it *perfectly unfit and unsafe* for the desired object."

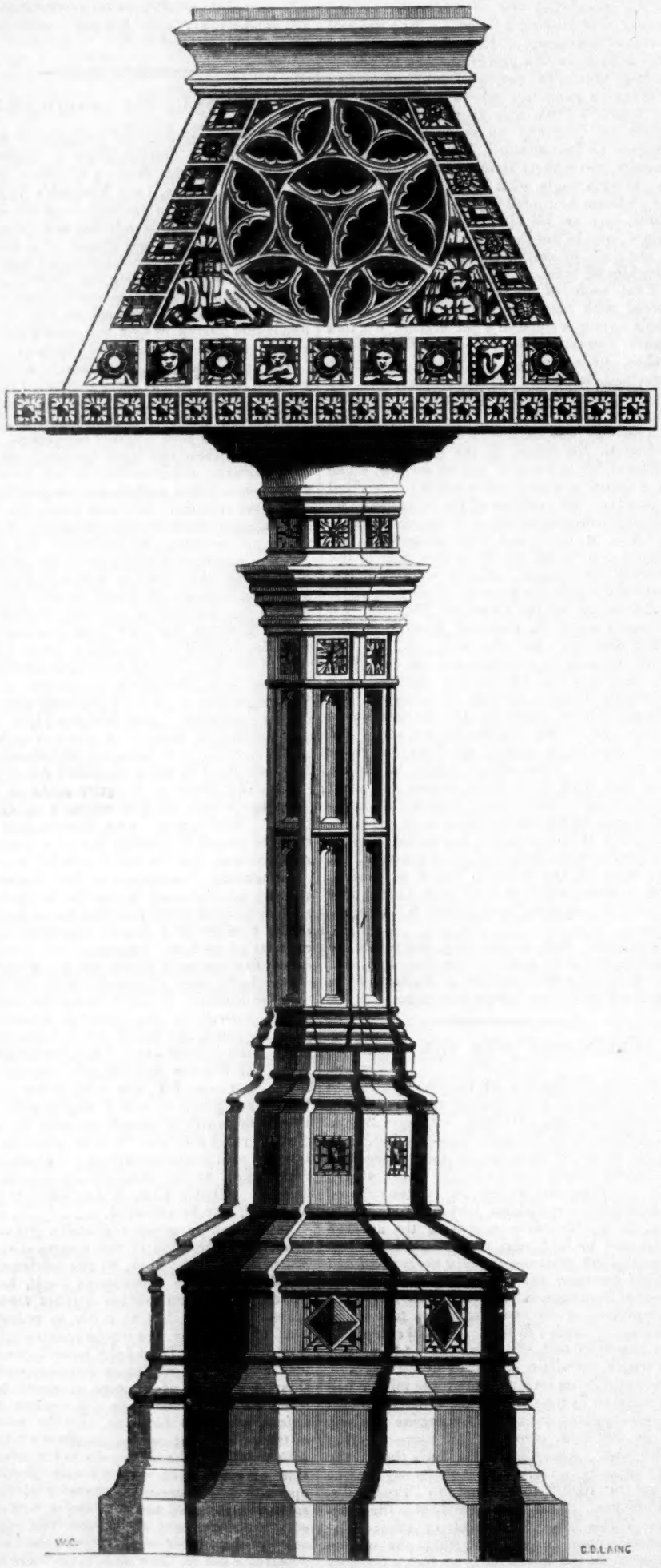
PROGRESS OF THE HEALTH BILL.

IN accordance with the prospect of perseverance in the determination to carry out something like the sanitary initiative during the present session, Lord Morpeth's bill was fairly launched into committee on the 1st instant; and, in face of a rather sulky than obstinate 'opposition,' one clause after another was telled over into the shape of incipient law, either by majorities ranging from 91, for going into the committee itself, down to 42, the lowest majority gained on the highest opposition offered, or *nem. con.*, onwards rather slowly to clause 21, on the 6th instant.

During the progress thus made, however, two clauses, Nos. 17 and 21, were postponed for consideration or modification by Government, and two others, formerly Nos. 19 and 20, were found to have been omitted altogether. The omission of these two latter clauses, Lord Lincoln declared would render the bill, in all but a few cases, either nugatory or inoperative, or altogether absurd. It would even, his lordship alleged, lead to the exclusion of such 'hives of industry' as Liverpool and Manchester; and accordingly Lord G. Bentinck, at once taking the credit to himself of reasons only that moment suggested to him, declared that he was justified in, and that the country would perceive he had good reasons for, throwing himself as a stumbling block in the way of this bill; and he accordingly forthwith called on Lord Morpeth to abandon at once so 'heterogeneous a mass of confused and blundering legislation.' His lordship (Lord Morpeth), however, assured his noble friends that as the boundaries of Liverpool and Manchester had been fixed by the corporation Act of 1835, 'those two hives of industry could at once have the benefit of this measure applied to them.' The reason why Government had thought proper to exclude the two clauses in question was, that the one conferred a power of extending boundaries to her Majesty in council, which should if possible be dispensed with, while the other provided for an increase in the number of a council dependent on the exercise of the first; whereas it was now conceived that the more proper mode of procedure would be to pass a separate Act, analogous to other boundary Acts, allowing the sanitary bill to operate in the meantime wherever it properly could, and which it still would do to a much more general extent than was imagined. As to the allusion to 'districts' surrounding towns in clause 6th, the withdrawal of the word was agreed to, and a modification promised, so as still to include suburbs while excluding rural districts. It is proposed to have but one paid commissioner, the expense of the commission to be confined to 1,000*l.* per annum. Clause 13th, if necessary to clear meaning, is to be amended.

In allusion to much reasonable grumbling against the exclusion of the metropolis, Lord Morpeth explained that, by the advice of the Health of Towns Association itself, he had excluded the metropolitan district from the operation of this bill, in order to reduce the risk of excluding the whole country till another session; and Lord John Russell remarked that honourable gentlemen opposite spoke of this question as if it were proposed *to exclude the metropolis from any sanitary regulations*, when the fact was, that the intention of the government was, to introduce a measure with respect to the metropolis in the next session of parliament. Honourable gentlemen opposite had expressed extreme zeal for the sanitary reform of the metropolis, as well as of the various towns throughout the country, and would no doubt be sorry were the result a defeat of both of the ends in view. He therefore hoped they would, at least, be defeated in their present object, as they might rest assured that the metropolis itself, as well as the country

WOOD LETTERN, DETTLING CHURCH, KENT.



at large, would thus be all the sooner provided with sanitary regulations. It was also explained that, to comprise the metropolitan area of drainage and supply of water, it had been found necessary to extend the limits of exclusion from four miles radius round St. Paul's, to ten.

During an incidental discussion on the subject of intramural interments, it was elicited that, while the vested interests of the clergy and others had hitherto prevented the removal of those plague-spots—the churchyards and the burial grounds—from the midst of dense populations, Lord Morpeth intended to follow up the Health of Towns Bill with another for the abolition of interment in towns.

LETTERN, DETTLING CHURCH, KENT.

The use of the ancient Lettern has (with the exception of a few yet in use in some of the cathedrals), been almost entirely superseded by the more modern reading-desk, so that but few good specimens are now to be found; they have rarely been used in this country since the reformation, and then only in cathedrals or college chapels to hold the Bible. The usual place for the lettern was the middle of the choir, the most convenient spot from which to read the lessons; they were sometimes made of stone, marble, or brass, but more generally of wood, and it was the custom of the Roman Catholic church to deck them with hangings, so as to accord with the high altar. The oldest specimen at present known is that at Crowle Church, Worcestershire, which is of the early part of the thirteenth century, and another beautiful specimen may be found at Wenlock, in Shropshire: these are of marble. Brass letterns are to be found in Canterbury cathedral, in many of the college chapels, and in a few parish churches, but they are more rare than those of wood. The common form of a brass lettern is that of an eagle with the wings spread, so as to bear the book. Of wood letterns, examples are to be found in Norwich and Wells cathedrals, and in many parish churches; but none of these are equal to that in Dettling Church: it is made with a desk for a book on four sides (the most common form is that with a desk on two sides only), and is more highly ornamented than any other specimen. The four sides are totally different as to design, but all of equal beauty. There has apparently been a finial at the top, which is now destroyed, and something seems wanting at the base, though altogether it is in very good preservation and free from paint, which may possibly be accounted for from the fact of it having been for a number of years kept in a small closet at the base of the tower, in close companionship with the coals. The stand is 5 feet 3 in. in height. This lettern is now in the north aisle, quite out of view, and I suppose out of favour too, as it is never used. From its beauty, it would be an ornament to any of our cathedrals, where it would be more suitably placed than in Dettling Church, which is without one interesting feature.

Wm. Caveler.

CARVED IMPOST AT IPSWICH.

Of the many curious examples of decorated corner-posts existing in Ipswich, the most highly enriched is the one here engraved, which forms a portion of the Royal Oak Inn, in Northgate-street. The upper portion represents, on one side, a blacksmith at his forge; and, on the other, a female head,—perhaps one is Vulcan, the other Venus. Beneath the figures is an enriched scroll-ornament, with heads of griffins, &c., in the style of the renaissance. Of the other imposts in Ipswich, the most curious is one in the court-yard of an old mansion in St. Clement's-street, which has a figure of Mars, and another, supposed to represent Queen Elizabeth, but which may be simply a figure of Justice. Another, at the corner of the Half-moon public-house, in Lower Brook-street, represents a fox preaching to some geese, one of which he is eventually carrying off as his prey. All these carvings are of the same period, the sixteenth century; but our readers will remember an example executed probably a century earlier, which we engraved in The Builder, p. 547, vol. iv., and which formed the corner-post of the ancient hostel, known as the New Inn, at Gloucester.

CARVED IMPOST, AT IPSWICH.

DOOR KNOCKERS.

Sir,—Amidst the motley assemblage of heads, or rather faces, of both sexes, animal and human, having iron rings, held by unnatural mouths, drilled through their jaws, of mean, puny, and unsightly cast-iron abominations, and of "genteel" brassy tokens of bad taste, it really gives one great pleasure to lay hands upon a good, substantial, and honest-looking door-knocker, one that unshrinkingly proclaims the services it renders to the community; and that pleasure is enhanced when it displays upon its bold face (as this does) the presence of art.

The inclosed is a wrought-iron specimen on the door of a private house in Whitehall Gardens, and, to all appearances, was placed there when those buildings were first erected. It is about 10 inches high. The bodies of the animals are wrought all round, and project 2 inches from the door. The joint, or hinge, is formed on a piece of iron, fixed behind the point where the tails are coupled together. The knock is made with the shell, in which the lower part of the legs are represented as being immersed in waves of water.

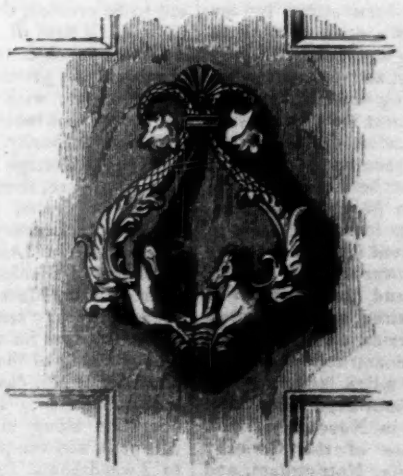
In Gray's time it was seemingly the practice to have them very massively executed; for, in "The Toilet," he says:—

> "The thund'ring knocker wakes the street no more,
> No chairs, no coaches, crowd her silent door."

Though we are, fortunately, seldom troubled with this nuisance, and never with the blast of a horn announcing the arrival of a visitor, we can still improve as much in decorating this useful appendage, as we are already in advance of the time when they had to "clipe at the door, or knocker, with a stone." (Chaucer.)

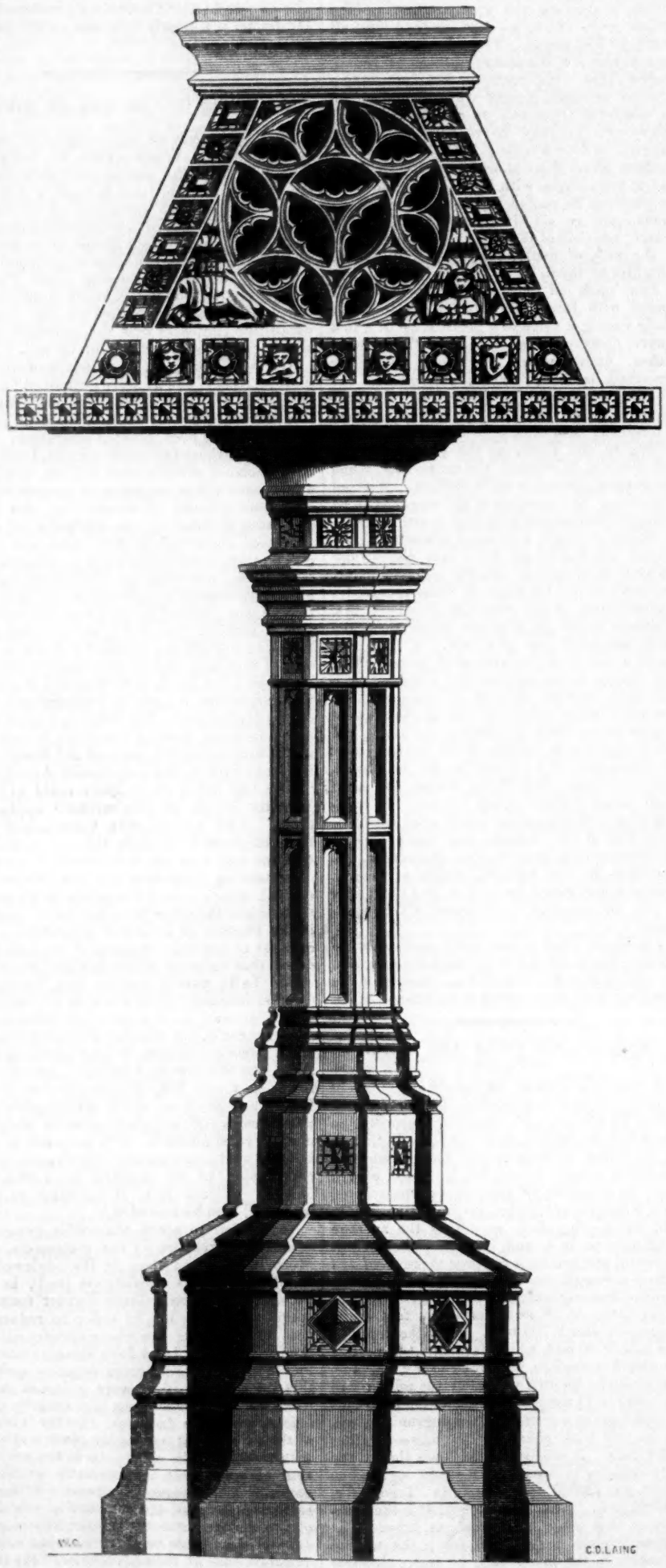
The only objection likely to be raised is the expense, it being usually left to the ironmongers, who use the old patterns; but surely this consideration cannot enter into the minds of such as would wish their houses to be, like the great monarch's palace, "all art."

I am, Sir, &c., B.



WROUGHT-IRON KNOCKER.

WOOD LETTERN, DETTLING CHURCH, KENT.



at large, would thus be all the sooner provided with sanitary regulations. It was also explained that, to comprise the metropolitan area of drainage and supply of water, it had been found necessary to extend the limits of exclusion from four miles radius round St. Paul's, to ten.

During an incidental discussion on the subject of intramural interments, it was elicited that, while the vested interests of the clergy and others had hitherto prevented the removal of those plague-spots—the churchyards and the burial grounds—from the midst of dense populations, Lord Morpeth intended to follow up the Health of Towns Bill with another for the abolition of interment in towns.

LETTERN, DETTLING CHURCH, KENT.

The use of the ancient Lettern has (with the exception of a few yet in use in some of the cathedrals), been almost entirely superseded by the more modern reading-desk, so that but few good specimens are now to be found; they have rarely been used in this country since the reformation, and then only in cathedrals or college chapels to hold the Bible. The usual place for the lettern was the middle of the choir, the most convenient spot from which to read the lessons; they were sometimes made of stone, marble, or brass, but more generally of wood, and it was the custom of the Roman Catholic church to deck them with hangings, so as to accord with the high altar. The oldest specimen at present known is that at Crowle Church, Worcestershire, which is of the early part of the thirteenth century, and another beautiful specimen may be found at Wenlock, in Shropshire: these are of marble. Brass letterns are to be found in Canterbury cathedral, in many of the college chapels, and in a few parish churches, but they are more rare than those of wood. The common form of a brass lettern is that of an eagle with the wings spread, so as to bear the book. Of wood letterns, examples are to be found in Norwich and Wells cathedrals, and in many parish churches; but none of these are equal to that in Dettling Church: it is made with a desk for a book on four sides (the most common form is that with a desk on two sides only), and is more highly ornamented than any other specimen. The four sides are totally different as to design, but all of equal beauty. There has apparently been a finial at the top, which is now destroyed, and something seems wanting at the base, though altogether it is in very good preservation and free from paint, which may possibly be accounted for from the fact of it having been for a number of years kept in a small closet at the base of the tower, in close companionship with the coals. The stand is 5 feet 3 in. in height. This lettern is now in the north aisle, quite out of view, and I suppose out of favour too, as it is never used. From its beauty, it would be an ornament to any of our cathedrals, where it would be more suitably placed than in Dettling Church, which is without one interesting feature.

Wm. Caveler.

CARVED IMPOST AT IPSWICH.

Of the many curious examples of decorated corner-posts existing in Ipswich, the most highly enriched is the one here engraved, which forms a portion of the Royal Oak Inn, in Northgate-street. The upper portion represents, on one side, a blacksmith at his forge; and, on the other, a female head,—perhaps one is Vulcan, the other Venus. Beneath the figures is an enriched scroll-ornament, with heads of griffins, &c., in the style of the renaissance. Of the other imposts in Ipswich, the most curious is one in the court-yard of an old mansion in St. Clement's-street, which has a figure of Mars, and another, supposed to represent Queen Elizabeth, but which may be simply a figure of Justice. Another, at the corner of the Half-moon public-house, in Lower Brook-street, represents a fox preaching to some geese, one of which he is eventually carrying off as his prey. All these carvings are of the same period, the sixteenth century; but our readers will remember an example executed probably a century earlier, which we engraved in The Builder, p. 547, vol. iv., and which formed the corner-post of the ancient hostel, known as the New Inn, at Gloucester.

CARVED IMPOST, AT IPSWICH.

DOOR KNOCKERS.

Sir,—Amidst the motley assemblage of heads, or rather faces, of both sexes, animal and human, having iron rings, held by unnatural mouths, drilled through their jaws, of mean, puny, and unsightly cast-iron abominations, and of "genteel" brassy tokens of bad taste, it really gives one great pleasure to lay hands upon a good, substantial, and honest-looking door-knocker, one that unshrinkingly proclaims the services it renders to the community; and that pleasure is enhanced when it displays upon its bold face (as this does) the presence of art.

The inclosed is a wrought-iron specimen on the door of a private house in Whitehall Gardens, and, to all appearances, was placed there when those buildings were first erected. It is about 10 inches high. The bodies of the animals are wrought all round, and project 2 inches from the door. The joint, or hinge, is formed on a piece of iron, fixed behind the point where the tails are coupled together. The knock is made with the shell, in which the lower part of the legs are represented as being immersed in waves of water.

In Gray's time it was seemingly the practice to have them very massively executed; for, in "The Toilet," he says:—

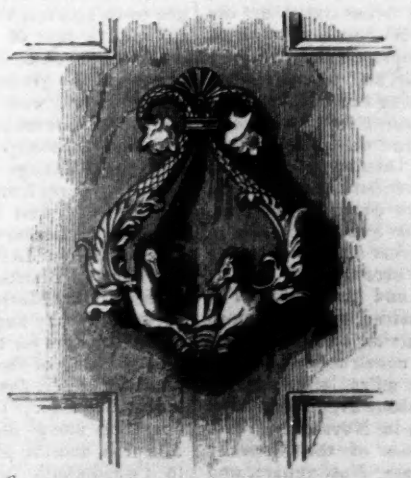
> "The thund'ring knocker wakes the street no more,
> No chairs, no coaches, crowd her silent door."

Though we are, fortunately, seldom troubled with this nuisance, and never with the blast of a horn announcing the arrival of a visitor, we can still improve as much in decorating this useful appendage, as we are already in advance of the time when they had to "clipe at the door, or knocker, with a stone." (Chaucer.)

The only objection likely to be raised is the expense, it being usually left to the ironmongers, who use the old patterns; but surely this consideration cannot enter into the minds of such as would wish their houses to be, like the great monarch's palace, "all art."

I am, Sir, &c.,

B.



WROUGHT-IRON KNOCKER.

RAILWAY JOTTINGS.

The resistance of the air to the rapidity of the flight of the locomotive and its train while in motion, is about to be 'compensated,' as it were, in rather a novel way, by an increase of energy and speed, to which that resistance itself is to be made subservient, according to its intensity, so that the greater the actual resistance, the greater the possible compensation, so far, at least, as an air-blast, by urging the engine fire, is capable of aiding in the generation and sustainment of power, and especially in the saving of so much of it as would be otherwise necessary in the sustainment of the ordinary air blast itself. The resistance of the air confronting the line of locomotion, yields, to all intents and purposes, an air blast capable of being thus harnessed by human ingenuity, and made to assist in counteracting its own inevitable tendencies, and that *especially* when the negative rush of air is seconded and reinforced by a positive current, also *in the teeth* of the locomotion. Indeed, such a triumph over Nature's laws, if practicable and complete, is only to be won by one of the happiest hits, if not the highest efforts, of human ingenuity; such as that by means of which, *e. g.*, the contraction and expansion of the brass and steel of clock and watch-work by cold and heat were 'compensated' through the appliance of these very tendencies themselves to the 'compensating' pendulum and balance. The end in view in the present instance is attained by the guidance of the rush or blast of air along a series of deflecting plates on the sides of the ash-box, which is divided into three longitudinal chambers,—so that, when the engine is in motion and exposed to the resistance or negative rush of the air, it impinges on these plates, and passes towards the fire-bars and the furnace, where it does the requisite duty; the resultant air and vapour passing afterwards along a second series of plates, inserted into the smoke-box, and leading into a chamber, terminating in an annular opening which surrounds the exhaust-pipe, and through which, and up the chimney, it is propelled with conditional force, according to the velocity of the engine and the resistance of the 'blast.' If necessary, the new blast may be shut off, or the ordinary blast reverted to. The patentee who has thus ingeniously made way with the wind in his face is a Mr. Kite.——The settlement of a much agitated question is likely to be promoted by a recent decision of the Chief Baron in the Court of Exchequer, in the case of a holder of 1,000 shares in the "Hull and Lincoln Direct" line against the directors for repayment in full of his deposits. Verdict for the defendants, who had offered the plaintiff his share *pro rata* of the surplus.——On the Maldon, Witham, and Braintree line upwards of 1,000 labourers are busily employed by Mr. Jackson, the contractor for the Royal Exchange, and several Government works. The navvies are said to be as steady and well conducted as those for whose orderly conduct on the Cambridge line the same contractor was complimented by the Vice-chancellor.——The Minster and Deal line was opened on the 30th ult.——At a recent meeting of the Southampton Improvement Board, according to the *Hampshire Advertiser*, Mr. Hicks denied that any filling in of the old canal, below the new tunnel on the Dorchester line, with concrete, had taken place, as had been stated by the sub-contractor.——On Wednesday week a clay cutting of the Bishopstoke and Salisbury branch suddenly gave way, and buried several labourers, seriously injuring two of them.——The *Hampshire Independent* says, in allusion to the sinking of the viaduct on the Avon, that "the bridge had never been considered safe, and the centres have never been removed. A gradual sinking has been going on for some time, and last week it was found necessary to prop up the arches by a great number of strong supporters, and to carry over the rails on timbers of great strength and thickness. The arches are now being repaired, and it is hoped the traffic can be still carried on uninterruptedly."——The entire construction of the Trent Valley line of fifty miles, lately opened, has cost 1,050,000*l.*, or about 21,000 per mile. The first sod was turned in November, 1845.——The foundation-stone of the Gonerby tunnel, on the Ambergate, Nottingham, and Boston line, was laid on the 21st ult. It will be 650 yards long, 30 feet high, and 24 feet wide, and will require 5,000,000 of bricks to case it.——The foundation-stone of the Helmshore viaduct, on the East Lancashire line, was laid on Thursday week. It is to be 400 yards long, double, and divided by retaining walls in the middle. There are to be fifteen arches, the principal of which is about 50 feet in height. They are to be erected on a curve of about ¾ mile radius. The works on this and other parts of the line are already in a forward state.——The keying-in of the largest arch of the extension viaduct at Huddersfield, on the Manchester and Huddersfield line, also took place on Thursday week. There are forty-seven arches on this viaduct. At the crowning arch, the square width of the roadway is 35 feet; oblique width, 56 feet 9 inches; rise, 9 feet 6 inches; width between parapets, 25 feet. This arch spans the Bradford road at an angle of thirty-eight degrees.——Penny-a-mile Government trains have been established between Gateshead and the metropolis; fare 20*s.*, children half fare; under three years free.——"Great works," says the *Berwick Warder*, "are in progress at Newcastle for the purpose of connecting the Newcastle and Berwick line with that which is to pass over the Tyne by the high level bridge; the foundations of which are now being proceeded with. This will be effected by a series of arches over part of the town, to make room for which several houses in the Castle-garth, Dean-street, Pilgrim-street, and the Manors have been removed, among which are the old Surgeons' Hall and one of the almshouses.——The bridge over the Tyne will form a new feature in that branch of architecture, uniting a railway on the summit of its arches, with a carriage-road suspended beneath them by iron rods."——The high level bridge over the Tweed, for the purpose of connecting the North British with the Newcastle and Berwick line will consist, according to the plan, of twenty-eight stone arches of 60 feet span, fourteen of which, the river arches, will have an elevation of 120 feet above low-water mark; the other fourteen sloping off the hill on the south side, towards the river. The contractors are busily employed with the land arch pier foundations and the river piles. The whole fabric is to be finished in three years, a temporary timber framework bridge, as already noticed, being designed to form a substitute till then. The stations on the Newcastle and Berwick are from designs by Mr. Benjamin Green, of Newcastle. They are all in the Elizabethan style. The architect has adopted a uniform system of combining two dwelling-houses together, by which he has obtained an increased elevation, and of course a more imposing appearance. At all the level crossings, too, the gatekeepers' and labourers' cottages are combined in one building, which, says the *Warder*, not only gives a very picturesque and pretty appearance, but also economises expense by reducing the number of cottages otherwise required. There is a bow window in every booking-office, so that the clerks can see both up and down the line while sitting at their desks. Each station has an arcade affording shelter from sun and rain, and the platforms are of the uniform length of 200 feet on both sides of the line. These are faced with ashler work, and laid with strong Lazenby flags. At Tweedmouth, where an important terminal station and depot are to be erected, the company are also about to build a row of fifteen cottages for their workmen, each containing two fire-rooms and pantry on the ground floor, and three sleeping rooms above, with yard, coal-house, piggery, and other conveniences, behind these; and, adds our authority, might afford some useful hints to the Cottage Improvement Society. The contractors are, from the North Shields line to Morpeth, Messrs. Rush and Lawton; from Morpeth to Lesbury, Messrs. Hattersley and Nowell; from Lesbury to Belford, Messrs. Mackay and Blackstock; and from Belford to Tweedmouth, Messrs. Grahamsley and Reed. Messrs. Mackay and Blackstock are likewise the contractors for the bridge over the Tweed. The working of the line is under the superintendence of Mr. Jas. Allport, and Mr. Hudson is the chairman. The telegraph is already in operation along the line from Newcastle to Morpeth, and the posts are placed all the way to Tweedmouth for its continuation northwards.——The operations at the station of the Caledonian line, in Lothian-road, Edinburgh, are being carried on with the utmost vigour and rapidity by large bodies of workmen. The station will comprehend an area of about twelve acres, and, inclusive of the price of ground and cost of station-house, will exhaust the large sum of nearly 100,000*l.* [according to the *Register*. *The Witness* states the cost of the 'terminus' itself at 30,000*l.*] The building is from the design of Mr. Tite, and the contract for its erection has been taken by Mr. Lind, the builder of the Assembly Hall and the Scott Monument. Considerable progress has been made in and near the deep cuttings by Grove-street, as the line enters the city. The whole of the Edinburgh branch, 27¼ miles in length, is to be opened about 1st October next. From Beatock to 3 miles north of Lanark, a length of 39½ miles, the line is expected to be opened by 1st of March, 1848. Between Beatock and Carlisle, the first 40 miles will be ready by 1st August next. The working stock is being built chiefly at Greenock under Mr. R. Sinclair, locomotive superintendent of the Glasgow and Greenock line. At Perth, Stirling, and other places, also numerous carriages and waggons are in progress—all on the most recent and approved principles.——The *Boston Traveller* says, that two thousand able-bodied men can obtain employment as common labourers along the line of the Erie Railway between Otisville and Binghampton; wages offered 4*s.* a day.——The telegraph wire at the Western Railway depôt, in Charlton, says a Boston paper, was lately blown across the track by a high wind, and caught hold of a train, sweeping off three of the brakesmen, one of whom was killed. The posts of our own telegraphs should be occassionally looked to.—By the way, the result of the late cup-day at Newcastle, could not be forwarded from Derby to town, on account of the effect of the lightning on the needles. We lately noticed some new invention which promised to prevent such a casualty in future.

ARCHÆOLOGY IN SUSSEX.

The Sussex Archæological Association held their annual meeting, at Chichester, on Thursday in last week, when the Lord Bishop presided, and a large number of members attended.

Mr. Freeman read a paper on Chichester Cathedral, but the reporters were so badly placed that they were unable to take any notes. The *Brighton Herald*, indeed, says, that with the exception of the vice-president and Mr. Britton, the speakers read and spoke in so low a tone of voice, and with such tremulous nervousness, arising from their being unused to address a numerous audience, that it was with extreme difficulty the distinct meaning of a sentence could be gathered.

Mr. Britton, before he read a paper on market crosses, particularly in reference to the antique Chichester cross, contrasted the present age, when so much intelligence was abroad, and inquiries were prosecuted on every side and on every subject, with the state of architectural literature and science when he commenced the world. He began his architectural studies literally alone: not a drawing, not a design, not a sketch fit to be seen was to be obtained. Mr. B. produced an early sketch of the great, but eccentric, Mr. Turner, who, at that time, would have made a sketch for a guinea that he would now expect to receive thirty guineas for. He also produced some original drawings of the well-known Captain Grose, the antiquary, and compared them with the beautiful and finished drawings of the present day, and now lying before the meeting, which shewed how much a knowledge of the science had extended, and how a taste for it was being diffused throughout society. After a few more prefatory observations, Mr. Britton proceeded to read a paper on market-crosses, which, he said, were intended originally to give shelter to persons attending markets. Religious men, immured in their cells, stood in need of the products of husbandry, and were dependent on them for food. To obtain a supply, inducements were held out to the country people to bring them into towns; and to promote this object they were exempted from tolls. Mr. Britton then gave a brief history of the various existing crosses in the country. Fortunately the history of Chichester-cross had been preserved by the

great destroyer—man. Its history was complete. It appeared that originally 10*l.* were given for the ground on which to erect a cross for "poor people," who were to be exempt from tolls on the produce they brought into the city. This was a specimen of the early introduction of free-trade principles. Mr. B. then produced a drawing of the cross, and observed, that the clock and an inscription on it did no honour to it, and if they were removed, and the cross restored, it would be one of the most beautiful in the kingdom. Mr. B. then entered more fully into the history of crosses. Most of them had been erected between 1480 and 1520. The first had been built by Queen Ellinor, and the example had been imitated in many parts of the kingdom.

The Rev. Vernon Harcourt read a paper on ancient Celtic barrows, two of which are situated on a hill a few miles north-west of Chichester; and the Rev. Mr. Shiffner read an historical paper on St. Mary's Hospital, in Chichester, of which he is custos. The date when this ancient and curious edifice was built is unknown, but it is supposed to have been in 1229. It was erected for the reception of nuns. The inmates had two rooms each on each side of the refectory, the roof of which reached within six feet of the ground.

The meeting then adjourned to the cathedral, every part of which was visited by the members.

Mr. Britton's suggestion, that the cross should be restored, was taken up very warmly, and the excellent Mayor, Mr. Mason, at the dinner which followed, called on the town energetically to subscribe for that purpose. We hope, sincerely, that it may be effected.

As to the works now going on at the cathedral, we have received but an indifferent account. We shall seek an opportunity to visit the building.

BRITISH ARCHÆOLOGICAL ASSOCIATION

The council of the British Archæological Association have entered upon the preliminary arrangements for the approaching congress to be held in Warwick, and the town has been visited for that purpose by the general secretaries. A local committee has been formed to make preparations for the visit, and the mayor and corporation have placed at the disposal of the meeting the Town Hall, &c.; the County Hall, Museum, and Theatre, will also be at its service, if required. It will be presided over by the president, Lord Albert Denison Conyngham, and be patronized by Lord Brooke, Lord Leigh, Sir Charles Douglas, M.P., W. Collins, Esq., M.P., and others. The opening meeting will take place on Monday, the 19th of July, not the 26th, as at first advertised.

How the Romans Set to Work to Build a City.—"Great circumspection was used in the choice of a site for a city, and one of the methods adopted, previous to the forming of an encampment even, was the institution of religious rites, when the livers of the victims sacrificed were carefully examined, and if they were found diseased, others were subjected to the same test, in order to prove whether the unhealthy appearance resulted from accident. If the greater number of experiments proved healthy, it was considered that the water and soil were salubrious. When the external walls were built, the next object was the best means of disposing of the area between them; the streets were set out to exclude winds injurious to comfort, and all the sewers and drains were well considered. Their public buildings were established in convenient quarters, and their foundations made adequate to bear the weight placed upon them. Laws were established which prevented individuals from doing any thing which would interfere with the public health or enjoyment. These were the first and chief considerations. Every man in Rome had a cistern, and a constant supply of water for domestic purposes, as well as drains into the common sewer, which was discharged into the Tiber; and the whole was under the control and management of proper officers." With the exception of the discharge of the refuse into the Tiber, this was a system well worthy of imitation.—*Cressy before the Health of Towns' Commission.*

THE ARCHITECT'S CHARACTER.*

It is for the architect or engineer further to remember, that in the pursuit of his profession he must not be content with merely qualifying himself for the exercise of it, as the mechanic or the tradesman may regard his avocation. He should prepare himself for the society and connections, to which his engagements will necessarily introduce him. It must be his endeavour to fit himself by appropriate accomplishments for intercourse with those who will employ him. He will be called upon to be associated with gentlemen of rank, fortune, and influence, with the nobles of the land, and occasionally perhaps will be admitted into the presence of the sovereign. He will have to reside as architect for days, nay perhaps weeks together, at the country seats, which he may be called upon to alter or rebuild, in society of the most brilliant class. Is it not then proper, that he should maintain his intellectual position, as a man of general knowledge in literature and science, as well as that in architecture? The higher classes have most of them a highly-wrought education, and their very intercourse with the world developes their faculties in a very superior manner, even when early instruction may have been neglected. It is important, therefore, that the professional man should not limit his attention to the department of knowledge which he may profess. He must refine his literary taste; enlarge his acquaintance with history; and make himself master of the topics of the day. This must proceed with the early studies of his art, and he must occupy the many leisure spare hours he has, by reading in that class, which will relieve the tedium of close application to the dry details of professional practice. His ambition must be to be the agreeable, intelligent companion, nay the valued friend, of those whose interests he may be called upon to protect, and whose property he may be required to improve by the results of his skill and taste. He must strive to be considered as something more than the mere necessity of the moment, disregarded and thrown off, when the time for his employment shall have passed.

* From an interesting lecture "On the education and character of the Architect," by Professor Donaldson, appended to "Architectural Maxims and Theorems." (Weale; Taylor and Walton, Gower street.)

INSTITUTION OF CIVIL ENGINEERS.

STREET SWEEPING—SEA WALLS.

June 29th.—The president in the chair. This was the last meeting of the session, and several papers were read in abstract because there was not time for giving them in extenso.

The first was "On the advantages and economy of maintaining a high degree of cleanliness in roads and streets; with an account of the construction and operation of the street-sweeping machine, by Mr. J. Whitworth.

It treated of the general advantages of street cleanliness, the comfort of the pedestrian, the avoidance of impurity to the air from the decomposition of dirt on the pavement; less dirt and dust being carried into the houses, a saving in the cost of maintenance of roadways, and a diminution of the draught of carriages. The annoyances of the common method of cleansing were then detailed—with the importance of employing plenty of water in the cleansing of streets, to liquify the mud, to cause the dirt to swell and rise from between the stones, to cool and purify the air during hot weather, and to prevent the dust from being driven into the dwellings. It then shewed how much economy there resulted from having force enough to cleanse the streets thoroughly and simultaneously in wet weather, particularly by Whitworth's sweeping-machine, which is a cart drawn by one horse and managed by one man; it has on one of the wheels a toothed wheel working into a pinion, which gives motion to a drum over and around which passes two endless chains passing also around another drum at the lower extremity of a light frame suspended at the tail of the machine, over an inclined plane depending from the drum frame; these endless chains carry a series of broad brushes formed of an Indian rush of peculiarly elastic and durable nature; they travel at a velocity depending upon the speed of the horse, and impinging upon the ground with a force which is regulated by a coiled spiral spring, carry the dirt up the inclined plane into the cart, whence it is emptied when the receptacle is full.

The next paper read, was "An account of the sea defences of Romney Marsh, commonly known by the name of Dymchurch Wall, and the probable origin of the Marsh itself, or the manner in which it was reclaimed from the sea," by Mr. James Elliot, Jun., the resident engineer.

Romney Marsh, properly so called, forms a triangle, the base of which would be a line drawn from Romney to Appledore, and the apex at Hythe, and comprises about 24,000 acres. It is probable, that this marsh was caused in the first instance by the formation of a natural barrier of shingle, nearly where Dymchurch Wall now stands, by which the sea was excluded, and that the first artificial works were executed by the Romans, when they held possession of the country. They consisted of the erection of cross walls running from the natural barrier (the "Full") to the hills, at the base of which the ancient river Limene ran. The chief of these (the Rhee Wall), ran nearly in a straight line from Romney to Appledore, and it was at that spot where probably the main work was performed.

Upon the supply of shingle from the west being cut off by the extraordinary accumulation at Dungeness Point, the natural barrier at Dymchurch gradually became weakened, and it was necessary to take some steps to prevent its total destruction; the first measure adopted was the erection of an inland wall at some little distance, at the back of the "Full," and afterwards, the construction of large stone groins on this point or sea-side, at right angles to the line of coast, in order to increase the deposit of shingle. However, as the supply of shingle gradually decreased, on account of the constant movement to the eastward, and as all that escaped in that direction was permanently lost, these means were found insufficient, and a system of "arming," with brushwood and timber-piling was adopted. This was found to answer the purpose for a considerable period, but it also, in the course of time, gradually became insufficient; and it was found necessary, at length, after numerous experiments, to adopt a stone facing with an average slope of about eight to one, up to high-water mark, gradually increasing in steepness from that point, and terminating in a curve of seven feet radius. The stones, which were laid in a bed of concrete, where they were most affected by the waves, were of different sizes, averaging from eighteen to six inches in depth, the largest of them being in the middle, where the greatest wear and tear took place, and at which place rows of sheet piling were also driven for additional security.

This plan was adopted by the author after mature deliberation on the reports of Mr. Rennie and Mr. Walker, and a very careful examination of the locality. Part of the wall has now been standing for ten years, and has required a very trifling amount of repair, while the annual expense has been reduced from 10,000*l.* to 4,000*l.*, with every prospect of a still further reduction being effected, as upwards of two-thirds of the work are now permanently completed.

The last paper was, "On Ocean Steam Navigation," by Captain Henderson, calling attention to the fact, that in this great maritime nation, naval architecture was neglected as a science, as was proved by the experimental squadrons and some of the ordinary steam-vessels lately built. Neither the public nor science had derived any advantage from these costly experiments, owing to the absence of any information, in a systematic form, that correctly described the relative size, capacity, resistance, power, or speed of steam-ships; the present tonnage and nominal horse-power, for all purposes of analogy, being quite fallacious.

The meeting was then adjourned until the second Tuesday in January, 1848.

Almshouses for Printers.—The subscribers to the Printers' Almshouse Fund have determined on purchasing a plot of ground at Wood Green, Hornsey, adjoining that of the fishmongers and poulterers, for 450*l.*, and to erect thereon six almshouses, containing two rooms each, to accommodate twelve persons and their wives, with library, &c. It has been suggested to the Caxton Fund Committee to erect their monument in the quadrangle of the above institution.

WESTMINSTER COURT OF SEWERS.

A GENERAL Court of Sewers was held on Friday the 2nd, Capt. Bague in the chair.

Increased Powers of the Commission.—The solicitor to the commission attended the court this day, and reported that last night the bill for enlarging the powers of this commission had finally passed both branches of the legislature, by which this court is invested with most extensive powers in furtherance of sanitary purposes. The Act, amongst many important provisions, provides that no houses shall hereafter be built unless a sewer or drain be first constructed to the satisfaction of the commissioners, and any person building a house in contravention of this regulation may be punished by fine or amerciament; that all houses within 100 feet of a sewer shall drain into such sewer at the expense of the owners or occupier; and if the owners or occupier do not carry on and complete the same with all reasonable dispatch, the commissioners may construct the same and recover the expense by distress and sale of the goods and chattels either of the owner of such house, or the *present* or *future occupier*, but the occupier to be at liberty to deduct this amount from his rent. The owners of tenements abutting on any street to be liable to the expense of any sewer running through the same. The commissioners have power to make sewers where none previously existed, and to stop up or divert old lines of sewers; and if they observe any stagnant cesspool, or any ditch, &c., likely to be prejudicial to health, it shall be lawful for the commissioners to require the owner of the property to put an end to and abate the same, and in case it is not removed in a reasonable time, to impose such fine or amerciament as may be equal to the expense of removal, and levy the amount upon the party in the ordinary mode of distress. The Commissioners of Sewers for the time being are authorised to raise loans to be secured on the rates, and powers are also taken to enforce the repairing and cleansing of sewers, drains, &c., and that where it may be difficult to ascertain the owners of property, it shall be sufficient to describe the property either by name or number, or any other convenient mode; and the property of the owner or occupier may be seized and taken to any place and sold, or the said party otherwise proceeded against.

After some discussion, it was unanimously resolved that the thanks of this court be presented to the members of Parliament, the solicitors, and officers, who had conducted this bill through its various stages.

The Act will come into operation forthwith. It contains all the essential portions of Lord Normanby's bill, with such other additions as have been suggested.

The solicitor next brought before the court the consideration of the Thames Conservancy Bill, now in progress through Parliament.

After discussion, the following resolution was agreed to:—"This court having considered the solicitor's report as to the Thames Conservancy Bill, resolved, that this court is satisfied that it is of the utmost importance for the public health and security to the sewage that the saving clause be retained, and that the solicitors do take every possible step to support it, or prevent the insertion of any clauses which may impair the efficiency of the saving clause."

The report of the committee on view of the Counters Creek sewer was read, which pointed out several cases of illegal drainage, and also the absence of any drainage whatever in some parts of the district of Kensal New-town. The committee said, that the state of it was of the worst description, and that their attention had been particularly drawn to it by the parochial authorities of Chelsea.

A report having been made on the want of drainage in Long Acre, which populous thoroughfare, it appears, is without any sewer whatever, it was stated by the clerk (Mr. Hertslet), that the property belonged to the Mercers' Company, who had been applied to repeatedly in every possible shape and way, but every effort appeared to be in vain, as the company could not be induced to move at all in the matter. It was suggested, that a jury should be called out to compel the performance of the work required. A commissioner said that his brother, who lately occupied a house in that street, had been compelled to quit it in consequence of the intolerable nuisance arising from the want of the accommodation above described.

LOGARITHMOTECHNY.

Sir,—Mathematicians and the curious will, I have no doubt, be obliged to you for publishing the following result:—

Log. π = 497149579004133854351988288390686873651678384388.

For the information of the general reader, it may be necessary to add that π is the circumference of a circle when its diameter is represented by unity, or—

π = 3141592653589793238462643383279502884197169399375l1.

The logarithm of a number consisting of so many places of figures, has not been before calculated to any thing near this extent; for, by any of the known methods, such a calculation is almost impossible. Perhaps you will allow me further to add, that I have discovered a method by which the logarithm of any number, to almost any extent, may be calculated independently of other logarithms in a few minutes.—I am, Sir, &c.,

OLIVER BYRNE, Mathematician.

Correspondence.

OUR REPRESENTATIVES IN PARLIAMENT.

SIR,—Although, perhaps, it may occur to some that this subject does not come within the scope of your excellent publication, yet I think I shall be able to shew that it does very materially affect the interests of the classes to whose cause you are devoted. When I speak of "our" representatives, of course I refer to architects, engineers, artists, and builders, and my object in writing to you is to shew, that these classes are not properly represented in parliament, and to urge upon some public-spirited individuals of each class to come forward as candidates at the ensuing election.

All shades of political and religious opinion are represented in Parliament; the railway world, the legal world, indeed almost every profession has its advocate in Parliament; then why, I ask, should not *we* send our representatives to Parliament? Upon Parliament devolves the duty of framing laws and imposing duties and customs which vitally affect our interests, and who so capable of knowing the effect of the laws, duties, and customs as those whose every day avocation brings their working under their notice. I might bring forward many illustrations of this; thus, the Buildings Act, the Brick Excise, the Window Duty, and many matters connected with railroads, all come within the sphere of one or other branch of the building profession.

Then, again, the Parliament, in their national capacity, are erecting a palace for themselves; they have schools of design under their control, &c. &c., and surely those who have given their whole and undivided attention to these points, are most fitted to undertake their management. I have very great hopes that the present state of things will be remedied next session, for I have heard the names of two eminent builders, and one engineer, as likely to be "put up," and I should be very glad to hear the same of some eminent architects, and even artists, who might wish to retire, either wholly or in part, from the toils of their profession, and to devote a portion of their time to the public weal.—I am, Sir, &c.,

A. G.

BUILDERS' TENDERS AND COMMITTEES—BATTERSEA PARK.

SIR,—Having observed many articles in your valuable paper on the subject of builders' competitions, I am induced to address you on the subject, in the hope that through the medium of your journal, some unfair dealing will be exposed with respect to some estimates which were delivered at the office of the Battersea Park Building Society, 9, Bridge-street, Blackfriars, in pursuance of an advertisement which appeared in THE BUILDER of the 1st May, 1847.

The advertisement invited builders to tender for building twelve houses at Battersea on the 11th May, and several tenders were delivered in consequence.

Although I, as well as two other builders, have repeatedly called at the office, we can gain no information as to whose tender was accepted, the amount of the tenders, or the names of the parties tendering.

At Battersea, I have heard that the works are to be carried into execution by Messrs. Thompson and Morgan, but can hardly believe that can be the case, as those gentlemen were named as the surveyors. I send you the amount of my tender, and also that of another builder, who joins with me in wishing you would invite all builders to send to you the copies of their estimates for this job, with a view to their publication, so that although the directors sit with closed doors, the builders may know if fair play has been meted out, or that many builders have been put to the expense of preparing an estimate merely *for the guidance of the directors* in making a bargain with their surveyors, and not with any intention of accepting any one of the tenders sent in, in compliance with the advertisement. I inclose my name, and am,—Yours, &c.

A BUILDER.

CLAY-BUILT COTTAGES.

Sir,—Your correspondent, "A Young Architect," does not say in what part of England he has seen cottages built of clay. In India, I know such primitive buildings exist, but the natives take care to protect them from denuding influences, by filling and surrounding them, before inhabited, with wood faggots;—fire is then applied, and the whole structure is thus thoroughly burnt *en masse*. In our climate, such a proceeding is much more necessary, and the neglect of it has led to the evil your correspondent complains of.—I am, Sir, &c.,

CHARLES JOHNSTON.
(Author of Travels in Southern Abyssinia.)
Lincoln's-Inn-Fields, July 3.

PLASTERING ON CLAY WALLS.

SIR,—In building clay houses, if a key be formed for the plaster in the same manner as that on plastering a ceiling or a partition, it would have the desired effect.

IVY ON CHURCHES.

To show the baneful effects of destroying ivy on walls, some years since the then proprietor of Netley Abbey, in Hampshire, had a quantity destroyed. The consequence was, as the ivy decayed the stone-work mouldered and decayed, and a great portion fell down, which otherwise would have lasted for many years.

THE NEW ENTRANCE TO THE GARDENS AT KEW.

If Mr. Burton would apply the same process of wax, as used by Mr. Herring, to the piers at the entrance to the gardens, it might possibly be the means of preserving their carving, which is already in some degree affected.

OPENING OF THE KEW ROYAL GARDENS.—On Saturday, the pleasure grounds in connection with the royal gardens at Kew, were, according to annual custom, thrown open to the public, and will remain so until the end of September, when they will be again closed until the Midsummer of 1848.

IPSWICH.—Sir,—The Mechanics' Institute "job" has failed—the supporters of the movement not being able to persuade the majority of the members into a belief of the superiority of the proposed site, or the chosen design, over the existing accommodation. One person, at least, is satisfied, or ought to be, viz.—the successful competitor, who fixed the premium at five guineas, and——obtained it.—Apropos of this degrading affair, the following is a contribution to the curious notices sometimes observable in shop windows, or other advertising localities. It is copied literally from a shop-shutter, in the parish of St. Clement's, in this town, and runs thus:—"Superior Black-lead pencils for Architects and Carpenters." It seems to carry its own comment, does it not?

For the better prevention of such accidents as that of the Dee Bridge, would it not be well to add to D'Israeli's suggestion of hanging an architect, and Sidney Smith's, of burning a bishop,—the smashing of an engineer?

Yours, Δ

Miscellanea.

Restorations in Takely Church.—There has been from time immemorial in the parish church of Takely a beautiful font cover, carved in oak, of pyramidal form and elegant proportions, but which, from the lapse of time and neglect, had become much mutilated, and for a long period had been defaced by a thick coating of red paint. This interesting relic is a specimen of the florid gothic style, ornamented with three tiers of niches, rising above each other, and terminating with a beautiful finial. Each niche is surmounted by a canopy of elaborate open tracery work, and adorned with a profusion of pinnacles, crockets, and finials. Flying buttresses, of light and airy character, separate the niches from each other. By the care of the late respected vicar, the Rev. Charles Clarke, it has been restored, and is now worthy the inspection of every lover of ecclesiastical architecture. By an ingenious contrivance, the cover is raised or depressed at will. The counterpoise of a very large weight, concealed above the ceiling, is hung by spectacle pullies, from which two chains, running through the weight, are affixed to the finial of the cover; this is locked to the font, but as soon as detached by the turn of a key, it rises immediately to a certain height, and is as easily brought down when required. There being also in the church a large quantity of antique carved oak panelling, having tracery of the same character as the font cover, and which had long been cast aside as useless lumber, the Rev. Charles Clarke and the churchwardens wisely determined on having the old, rough, and deforming paint removed, and the broken work restored. With these, the pulpit has been embellished, and a reading-desk formed; and by the removal of some most unsightly pews, room was made for a series of open benches, having decorated ends, richly moulded; these also have been constructed out of the old panelling before referred to. The pulpit was originally octagonal, but there being only five panels left, it was carried back to an ornamented recess in the north wall, the beauty of which has only lately re-appeared by the removal of a thick coat of whitewash. This recess is in the Tudor, or late perpendicular style, square-headed, and ornamented with an ogee arch, richly carved and adorned with tracery, crockets, and finials, the whole being surmounted by a battlement, with a hollow moulding beneath, in which are placed the Tudor rose and square flower, characteristic of this style. The whole of these alterations were designed and carried out by Mr. Wm. Ollett, jun., wood and stone carver, of Norwich. Mr. Ollett's father is well known in the city of Norwich as a carver in wood, and particularly in ecclesiastical architecture. He was a candidate for a portion of the carved work in the new House of Lords.—*Chelmsford Chronicle.*

Towns Improvement Clauses Act.—The *Times* gives the following abstract of this Act, which received the royal assent on the 21st ult.:—"Wherever the Act is adopted, surveys and authentic maps of the districts within the limits of its operation are to be made, proper sewers and house drains are to be constructed, roads and footways are to be well paved, streets are to be laid out and improved with a view to general convenience, precautions are to be taken with reference to dangerous buildings and the execution of work, streets are to be duly cleansed, nuisances are to be abated; the consumption of smoke, precautions against fire, and the ventilation of public buildings are to be attended to; common lodging houses are to be placed under supervision, supplies of gas and water are to be afforded, slaughter-houses are to be regulated, and places for public recreation, public baths and washhouses, and public clocks are to be provided. For all these purposes of unquestionable general advantage general rates are to be raised.

The Carpenters' Tribute.—A beautiful piece of wood-work, representing a monumental tribune, was lately carried by eight men in a procession of 500, to the residence of M. Berryer, Rue Neuve des Petits Champ, Paris, and there presented to him as the only tribute of gratitude or recompense he would receive, for having ably defended the body of carpenters, accused some time since of a coalition.

Cromlechs.—At a recent meeting of the Society of Antiquaries, Mr. Britton addressed a letter to the president "On Cromlechs and Kistvaens," accompanied by the exhibition of numerous drawings of each class of such Celtic monuments. The object of this paper was to show that both the cromlech and the kistvaen were sepulchral in their origin, with this difference between them; the former consists of the largest blocks, which are put further apart from each other, without any attempt to fill the interstices; are placed on high ground in open view, instead of being immersed in a barrow, and the lid or roof is one large and prominent block, instead of being made of several pieces. The kistvaen, or *stone chest*, is an inclosure of stones smaller than those of the cromlech, placed in an upright position, almost or quite touching each other, inclosing a bottom of rock or stones; it is completed by a covering of several flat stones, and closely surrounded by a mound of earth. They are found not only throughout our own empire, but also in France, Spain, Scandinavia, Russia, and even in North and South America. They have therefore excited great discussion; and while Norden, Camden, Aubrey, Stukeley, Borlase, and Pennant advocate their funereal appropriation, Toland, Rowland, Pegge, and King maintain that they were altars for the sacrifice of human victims, as alluded to by Cæsar, Tacitus, Strabo, and others. Whitaker thought that to consider a cromlech an altar for the oblation of sacrifices, was burying good sense in a quagmire of learning. Mr. Britton quotes a long list of writers on this question, and decisively concludes that the true purpose of these monuments is sepulchral; and from the whole argument it can be reasonably inferred, that the British cromlech and kistvaen might be considered as rude representatives of the classic mausoleum and sarcophagus.

Copper, Tin, &c.—From a return just issued by order of Parliament it appears that the quantity of copper ore imported into the United Kingdom in the year ending 5th of January, 1847, was 51,623 tons; and of copper manufactures (entered by weight) 49 tons, odd, and (entered by value) 4,670*l.* The net amount received in the various kinds of copper imported was about 55,000*l.* The total exports of British copper during the same year was 15,717 tons, and of foreign copper about 550 tons, besides 536*l.* worth of copper manufactures entered by value. The total quantity of British copper exported from the port of London was upwards of 6,197 tons; and from Liverpool, 4,360 tons. Of tin there were imported into the United Kingdom during 1846, 1,015 tons, and 3 tons 17 cwt. of tin ore and regulus. There were exported from the United Kingdom during the same period, 1,195 tons of British tin, and 1,051 of foreign. Of zinc, there were imported 7,245 tons, and of lapis calaminaris 150 tons into the United Kindom (duty free); and exported from the kingdom, 1,212 tons of British, and 4,783 of foreign zinc or spelter. Of lead, there were imported 7,862 tons of pig or sheet lead, 724 tons of lead ore, and 12 tons 13 cwt. of white lead. There were exported from the United Kingdom in the same year 53 tons 13 cwt. of lead ore, 6,421 tons of pig or rolled lead, 1,073 tons of shot, 349 tons of litharge, 812 tons of red lead, 1,436 of white lead (all British), and 4,700 tons of foreign pig or sheet lead, and 1 ton 17 cwt. of foreign lead ore.

Church Extension in St. Pancras.—The proposal of the vicar for the erection of ten churches has been generally adopted by a meeting of the clergy and gentry of the parish, who have liberally subscribed. The report of proceedings already taken, read to a recent meeting, concluded with a hope or expectation that, before the end of the year, much would be done. Since March last, the subscriptions, many of them annual, amounted to about 3,420*l.* Temporary churches have been built in four districts, and sites for several of those to be built have been granted, one, with a donation of 500*l.*, from the Duke of Bedford.

A Lofty Chimney in Whitechapel, attached to the extensive premises of Messrs. Bowman and Sons, 27, Great Alie-street, toppled over on Thursday last week, and fell upon the roofs of some adjoining houses, demolishing the garret roofs and floors, but injuring no one but a child. The chimney was always considered perfectly safe.

Projected Works.—Tenders have been called for by advertisement, for the works to be done in the erection of the congregational church at Kentish Town; the taking down and rebuilding of St. Pancras Chapel; the erection of a parsonage house near Luton; and two school-rooms for 400 children, with master's house, in Ipswich; the execution of builder's work to be done in the parish of St. Nicholas, Ipswich; the erection of three cottages, stall-feeding building, and cattle shed, near Houghton-le-Spring; the execution of the works on 2½ miles of the East and West India Docks and Birmingham Junction Railway; the erection of all the stations on the Manchester and Leeds Wakefield and Goole line, the building of the permanent station and station-master's house at Tweedmouth, on the Newcastle and Berwick line, including iron roofing, slating, painting, glazing, &c., and also for twelve cottages; the sinking of the shafts and the driving of the headings in five of the tunnels on the Monmouth and Hereford line; the sinking of twelve shafts for the tunnels on the Bristol and South Wales Junction line; also for furnishing and repairing York square or patent lamps, with fittings, and lighting &c., in Hampstead; supplying 100 iron lamp-posts, 100 lantern frames and ladder rests, and 100 gas lanterns in Bromley St. Leonard, Middlesex; also for a supply of 1,000 tons hard Guernsey granite for Brentford Union workhouse; and of paint, pig-lead, &c, for the East-India Company.

Battersea.—Sir: Your mention of "Old Chelsea" is just, kindly intended, and beneficial to every interest connected therewith. Now! do a kindly turn for "poor old Battersea;" be good enough to ask Viscount Morpeth why it is he confines his sympathies to the Chelsea side of the river? Why, after having given notices that the various properties would be required, he allows the matter so to falter that it brings ruin on all those weaker parties who are unable to exist for six months on their other means,—some in prison, some upheld only by the mercy of those to whom they are indebted; seek for information as to how it falls out, that while he is advocating every endeavour to advance the mental and bodily improvement of the people, he is leaving Battersea fields to be occupied every Sunday for horse-racing, drinking, &c. Ask him to satisfy all parties, that the report is untrue,—"That the expense is so much beyond the estimate, that it is necessary, by starving out, to reduce the property to the level of the means at the disposal of the commissioners."

I am, Sir, &c., Ecurd.

Glass in Greenhouses.—At the late meeting of the British Association, a paper was read by Mr. Robert Hunt, on the principles upon which the glass is selected for the great palm-house, at Kew. From experiments which he had made, under the direction of Sir W. J. Hooker, he had found that decomposition in plants always proceeded under the red ray, and therefore the principle of his plan for their protection was to select a colour in which the peculiar influence of such rays could be effectively secured. This was most satisfactorily effected by the use of green glass, to a recurrence to the use of which the old horticulturists in the neighbourhood of London had at once given their approbation. It was necessary, however, that no manganese should be used in its composition, as its introduction had a tendency to make a pink colour, which possessed one of those injurious attributes, which were to be avoided.

Iron.—A premium of 1,000*l.* has been offered by the Royal College of Chemistry, for the discovery of a method of rendering iron, when applied to ordinary purposes, as little liable to rust as copper.

Gratuitous Admission to Westminster Hall.—On Monday, the 19th inst., the public will be admitted, free of charge, to view the works of art now exhibiting at Westminster Hall.

Competition.—Plans and estimates are wanted for an additional pauper lunatic asylum for Middlesex, with a premium of 300*l.* for those most approved, and further premiums of 200*l.* and 100*l.* for those second and third in excellence. See advertisement.

A Surveyor is Wanted for the town of Brighton at a salary of 250*l.* per annum, and an office clerk or assistant's salary.

CHARGE FOR ADVERTISEMENTS IN "THE BUILDER."

	£.	s.	d.
For Sixty Words or less	0	5	0
Every additional Thirty Words	0	1	6
One Column	2	2	0
One entire Page	5	5	0

For a series of advertisements above 5s. a reduction will be made.

TO CORRESPONDENTS.

"*G. W.*"—It is beyond our province to supply plans.

"*Inc.*" (Manchester)—Shall hear from us.

"*L.*"—We will inquire into the circumstance.

"*F. A.*"—Having already spoken of the invention several times, we are not disposed to refer to it again until seen in operation.

"*Stone Lifter.*"—Next week.

"*Eton.*"—A correspondent informs us that some drawings in chiaroscuro are now visible on the walls of Eton College Chapel, in consequence of the removal of the wainscotting, which had hitherto concealed these portions of the walls.

Received.—"A Railway Traveller," "Gwilym," "Young Surveyor," "W. R. S.," "J. P.," "M. S." (Garstang), "Londoner," "One of Your Numerous Readers," "H. T.," "A. T." "J. T." "W. W." "I. B." "J. K." "Student," "C. C." "A. U." Handel's "Dettingen Te Deum," arranged by Vincent Novello (Novello, 69, Dean-street, Soho); Handel's Oratorio, "Judas Maccabæus;" Haydn's Oratorio, "The Creation" (Novello).

ADVERTISEMENTS.

LAST WEEK BUT ONE.

ROYAL ACADEMY of ARTS, Trafalgar-square.—The Exhibition of the Royal Academy is now open. Admission (from Eight o'clock till Seven), One Shilling; Catalogue, One Shilling. JOHN PRESCOTT KNIGHT, R.A., Dep. Sec.

ROYAL POLYTECHNIC INSTITUTION.

THE ELECTRIC TELEGRAPH COMPANY has deposited for a limited period, a complete series of APPARATUS, illustrating the Principles of the ELECTRIC TELEGRAPH as now worked on the leading Lines of Railway. Also, superb Specimens of their ELECTRIC CLOCKS, ALARUM, &c. Various Works of interest explained. Dr. BACHHOFFNER'S LECTURES on NATURAL PHILOSOPHY CHEMICAL LECTURES by H. M. NOAD, Esq., on the Evenings of Monday and Wednesday. The beautiful OPTICAL EFFECTS, include the last Dissolving Views, Diving Bell, and Diver, with Experiments, &c. &c. Admission, 1s.; Schools, Half-price.

WALLIS'S PATENT LIQUID WOOD KNOTTING.—This newly-discovered Liquid Composition, which Messrs. Geo. and Thos. Wallis have the satisfaction of introducing to the Trade, possesses the important qualification of effectually stopping Knots in Wood, however bad, and preventing them casting through and disfiguring the paint above.

Many substances have been used and much time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and anxiously called for.

In the application, skill is not required; it is put on to the work with a brush like common paint, can be used in all climates and situations, and does not require heat.

Sold wholesale and retail, by Messrs. G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 64, Long Acre.

TODD'S PATENT PROTOXIDE PAINT manufactured by CHAS. FRANCIS and SONS, CEMENT WORKS, NINE ELMS, LONDON.

The properties of this Paint are peculiar for preventing iron from oxidation, wood from decay, and masonry from damp; it neither cracks nor blisters with the hottest sun, and is therefore most valuable for Railways, Boilers, Steam, Gas, and Water-pipes; Hothouses, Forcing-houses, and for Shipping. Its adhesion is so great to iron and wood, that the hardest friction will scarcely remove it. It prevents vegetation on stuccoed buildings, and is not affected by spray of sea-water.

PROTOXIDE PAINT is sold ground in oil, and, compared with white-lead, its property of concealing is as 73 to 50, so that one hundred weight is equal to one and a half of lead. It works well under the brush, and forms with oil an unctuous and cohesive mixture. If blended with other paints it has a softer tone than white-lead. For houses painted during occupation, it is most preferable, being perfectly innoxious.

STEPHENS'S PROCESS for DYEING or STAINING WOOD, as a substitute for Paint. The natural grain of wood is imitated by art, but the most successful imitation has a sameness of appearance when compared with the constant variety which different woods present in their natural grain. To give an ornamental colour to the wood without obscuring the grain, is the object of this process, which surpasses paint in appearance, while at the same time it is so economical that the whole interior of a house, which would take a month or six weeks to paint in the usual manner, may be finished in one week by the process above named, and be more pleasing when finished. The dyes or stains are prepared and sold by HENRY STEPHENS, 54, Stamford-street, Blackfriars-road, London, in bottles of 6d. and 1s. each, and at 10s. per gallon. The oak colour may be obtained in powder at 8s. per pound, which dissolves in water to form the liquid, and one pound will make one gallon of stain.—N. B. The Trade supplied.

Sold also at the office of "THE BUILDER," 2, York-street, Covent Garden, London.

DRUCE'S, No. 2 WHARF late Paradise-wharf, Chelsea.

TO THE TRADE.—Parties desirous of delivering Timber Deals, Stone, Bricks, or any other goods, in the districts of Chelsea, Brompton, Fulham, Kensington, &c. &c., will find great facilities of Wharfage, Cranage, or Delivery, by applying as above. A weigh-bridge and drawdock.—N.B. Depot for Glass Pantiles.

PORTER'S CORRUGATED and PATENT GALVANIZED IRON ROOFING WORKS, Southwark-bridge (and the Grove), Southwark. At the above Works, the Public are secure in having the superior make, and by the Patent process of Galvanizing Iron as first introduced into this Country, with many improvements in its application to Roofs, Buildings, &c. Every description of Building, Railway, and other Iron and Smith's work Manufactured of the best quality. Iron Fence and Hurdles as usual.—The Trade Supplied.

HANOVER-SQUARE ROOMS.

INTAGLIO-RILEVATO.—The general features of this superb and unique art have been adapted to the manufacture of Decorative Furniture, and other objects of embellishment and vertu; and it is in an especial manner recommended to the consideration of the regal, the illustrious, the noble, and all who move in the upper circles of society.

*** The Exhibition will remain open until Wednesday, the 21st, daily, from twelve to five o'clock, at the Hanover-square Rooms, where cards of admission can only be had of R. TURLEY, Manufacturer and Proprietor.

GREASE! GREASE! GREASE!—JAMES THOMAS FITT begs to inform Railway Contractors, that he is supplying Patent Grease at the following prices:—White Grease, 11s. per cwt.; Black Grease, 8s. 6d. per cwt. 2½ per cent. discount for cash.

Samples sent by addressing to J. T. FITT, Swan Mead, Bermondsey New-road, London.

RAILWAY and other Surveying, Levelling, &c., Practically Taught.—The above with use of the Theodolite and other first-rate Instruments Practically Taught on a Survey for a Line of Railway for the next Session of Parliament. Proficiency and Employment afterwards guaranteed. References to pupils and others.—Apply to G. M. TODD, Civil Engineer, 34, Shipperton Cottages, New North-road, Islington.

TO ARCHITECTS, BUILDERS, AND CONTRACTORS.

THE Architectural Carving Company beg to inform the Public, that Specimens of their CARVING IN WOOD AND STONE may be seen at No. 21, Old Bond-street Works, late Sir F. Chantrey's foundry, Eccleston-place, Pimlico.

TO BUILDERS, PAINTERS, AND OTHERS.

MESSRS. WOOD and Co., GRAINERS. and WRITERS to the Trade only. 70, York Road, Lambeth; and at 28, Cross Street, Blackfriar's Road.

CHEAP ORNAMENTAL GLASS.—I beg to inform my friends and the public, that I have now completed a new ENGINE, and owing to the facility with which I can execute orders, I am enabled to reduce my former prices considerably. The prices are now from ONE SHILLING PER FOOT SUP., and Borders from SIXPENCE PER FOOT RUN. A large quantity of the cheapest patterns always in stock. Embossing and painted work on the most moderate terms.—CHARLES LONG, No. 1, King-street, Baker-street, Portman-square.—Cash only.

THOS. MILLINGTON, 87, Bishopsgate-street Without, has a large Stock of Crown Glass on hand of the following sizes:—10 by 8, 9 by 7, 8 by 6, at 2d. per foot. Every description of Window Glass.

FOREIGN WINDOW GLASS, superior to English, 16 ounces to the foot, suitable for general purposes, in cases of 200 feet, for 42s., or about 2½d. per foot, in large dimensions; smaller do., in 100 feet cases, at 2d. per foot. Not less than a case can be had at these prices, and the order must be accompanied with a remittance.—THOS. MILLINGTON, 87, Bishopsgate-street Without.

COLOURED WINDOW GLASS, equal to the Ancient.

	2s.	3d.
Ruby in Sheets, a splendid colour, per foot		
Green	1	3
Blue	1	0
Purple	1	0

Glass Engraved to any Design.—THOS. MILLINGTON, 87, Bishopsgate-street Without.

PLATE GLASS.—Architects, Builders, and the Trade generally, are solicited to inspect the quality and substance manufactured by the UNION PLATE GLASS COMPANY.

N.B. Rough Plate supplied one-fourth, three-eighth, one-half, and three-quarter-inch thick.—Warehouse, 99, Hatton-garden, Holborn.

H. CHRISTIE, Agent.

EMBOSSED GLASS.

EDWARDS and PELL, 15, Southampton-street, Strand, Embossers, and Ornamental Glass Painters, are prepared to execute every description of Work in the best style and on the lowest terms: Embossed Borders from 8d. per foot run. Architects and Builders are respectfully solicited to inspect the patterns which are always on view, and will be found equal to any in London. As the work is done on the premises, EDWARDS and PELL can guarantee its being properly executed.

SOHO PLATE GLASS WAREHOUSE, 26, SOHO SQUARE.—A. GOSLETT begs to inform Builders and the Trade generally, that he is prepared to contract for the supply of any quantity of Belgian 21 and 16 oz. Sheet Glass, either cut to sizes or in 100 and 200 feet cases, delivered free in London. Having a large stock on consignment at his Warehouse, he begs the favor of an inspection; he has also just received a few cases of very fine ruby and other coloured sheet glass at very low prices.

SOHO PLATE GLASS WAREHOUSE, 26, SOHO-SQUARE, depot for the sale of the PLATE GLASS manufactured by the St. Gobain and St. Quirin and Cirey Companies, Paris. The attention of Architects, Builders, and the Trade generally is particularly requested to this article, which stands UNRIVALLED FOR BRILLIANCY OF COLOUR, superiority of substance and polish, and possesses almost faultless quality. This Plate Glass can be procured of any dimensions.—Applications for samples, lists of prices, and all further particulars, to be addressed to ALFRED GOSLETT, Agent, 26, Soho-square.

TO PLUMBERS, PAINTERS, AND GLAZIERS.

CROWN GLASS, in Crates of Eighteen Tables, at the following low prices, for ready money:—

		£. s. d.	
Crown Glass cut to size from one foot upwards, at 3d. per foot.	Thirds	4 4 0	Squares of Small Crown Glass, at 1d. 1½d., 2d. and 2½d. per foot.
	Fourths	3 10 0	
	C.C.	3 5 0	
	C.C.C.	3 0 0	

SHEET GLASS of all descriptions equally low.—White Lead, Oil, Turps, Colours, and Varnishes, at WILLIAM FREDERICK FENTON'S Window Glass, Lead, Oil, and Colour Warehouse, 26, West Smithfield, London.

WINDOW GLASS.

JAMES PHILLIPS and Co., 116, Bishopsgate-street, Without, beg to call the attention of the Trade to their reduced prices of Crown and Sheet Glass for cash only.

CROWN GLASS, in Crates.

		£. s. d.
Best	12 Tables	3 0 0
Seconds	15 "	3 7 0
Thirds	18 "	3 11 0
Fourths	18 "	3 1 0
CQ	18 "	2 4 6
CCC	18 "	1 15 0

CROWN SQUARES, in 100 feet Boxes.

4 by 3 and 4½ by 3½	..	11d.	₰ ft.
5 .. 3 "	5½ .. 3½	.. 1½	"
6 .. 4 "	6½ .. 4½	.. 1½	"
7 .. 5 "	7½ .. 5½	.. 2	"
8 .. 6 "	8½ .. 6½	.. 2	"
9 .. 7 "	10 .. 8	.. 2½	"
Quarries 10		.. 2½	"

Squares cut to order, 3d. per foot.

SHEET GLASS in Crates.

Horticultural	13 oz. ..	2½d. ₰ ft.
"	16 ..	3 "
Sheet Glass ..	16 ..	3½ "
" " ..	21 ..	4 "
" " ..	26 ..	7 "
" " ..	32 ..	8½ "

BEST HORTICULTURAL SHEET GLASS,

For Hothouses, Conservatories, &c., in sizes up to 40 in. long.

16 oz. per foot	..	0s. 4d. ₰ ft.
21 "	..	0 6 "
26 "	..	0 8 "
32 "	..	0 10 "

GLASS TILES AND SLATES.

	16 oz.	21 oz.	26 oz.	32 oz.
Tiles made of Sheet Glass	9d.	11d.	1s. 2d.	1s. 6d. each.
Slates, 20 by 10	10d.	1s.	1s. 4d.	1s. 8d. "

Best Linseed Oil Putty, 8s. per cwt.

116, BISHOPSGATE-STREET, WITHOUT.

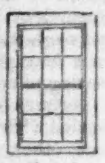
TO THE BUILDING WORLD.

H. BANKS, Manufacturer of Shop Fronts, Sashes and Frames, and Joiner to the Trade, 78, Bethnal-green-road, London. Parties engaged in building will find the charges of this Establishment cheaper than any other house in London. A full list of prices forwarded by return of post to any part of the country.

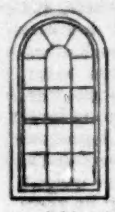
N.B. Glazed goods securely packed for the country.

CHAS. WM. WATERLOW,

MANUFACTURER of Sashes and Frames, and Joiner to the Trade, 183, Bunhill-row, Finsbury-square.—Well-seasoned materials, superior workmanship, lowest prices.—Upwards of 400 DOORS, and a large variety of Sashes and Frames, always on sale. Glazed goods securely packed for the country. Steam-struck Mouldings in any quantity.—N.B. This Establishment is worth the notice of all engaged in building.

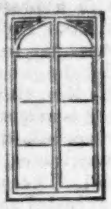


SHOP FRONTS, SASHES AND FRAMES, DOORS, &c. MADE FOR THE TRADE.



JOHNSON and PASK,
1, Amwell-street, Clerkenwell, near the New River Head,

Beg to inform the Trade, and the Building Public in general, that they continue to manufacture Sashes and Frames, Shop Fronts, Doors, and all other kinds of Joiners' work, on the lowest possible scale of prices. All kinds of Wainscot and Mahogany work done in the very best manner; French polished, and carefully packed for the country.—A full list of prices forwarded by return of post, to any part of the country.



AIR PUMPS, Second-hand, for Sale, about Thirty with Cocks, &c., of good workmanship (they have been used to work coin-presses after the system of Bolton and Watt: for the Mints of Russia and Denmark), now lying in Holland.—Particulars and a drawing at EBEN HEATH, Jun., 32, Gracechurch-street.

TO ARCHITECTS, BUILDERS, AND BRICK-MAKERS.

PUMPS of Superior CONSTRUCTION, bored perfectly true by improved machinery, in various plain and ornamental patterns for Conservatories, Squares, Market Places, Roads, Gardens, and for Liquid Manure. BRICKMAKERS' PUMPS, in Wrought and Cast Iron, HYDRAULIC LIFT PUMPS, and ENGINES for Wells of any depth. SINGLE and DOUBLE PUMPS up to twelve-inch bore, kept for Hire.

BENJ. FOWLER, 63, Dorset-street, Fleet-street.

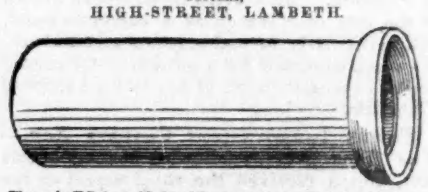
PUMPS.—The attention of Architects, Builders, Contractors, Brickmakers, Barge and Ship Builders, and others, are respectfully requested to M. A. RICHARDS' superior Stock of Pumps for Roads, Gardens, Excavations, Brickfields, Liquid Manure, Barges and Ships, in Wrought or Cast Iron, bored perfectly true by Machinery. Hydraulic Lift Pumps for Wells of any depth. Single and Double Barrel Pumps up to 10-inch kept for hire. Estimates given to Drawings if required.—M. A. RICHARDS, 3, Old Barge-house-street, Commercial-road, Lambeth.

PERLET'S IMPROVED DOUBLE-ACTION PUMP.

JOHN CLARK feels desirous of drawing the attention of the Nobility, Gentry, Contractors, and the Public in general to PERLET'S IMPROVED PUMP, worked from a single cylinder, causing a constant stream of Water, and which, from its simplicity, can be converted into a Fire-engine in two minutes, or made useful for every domestic or other purpose. Can be strongly recommended for deep Wells, Mines, &c.; in this respect not requiring an extra barrel, rods, rollers, &c., obviates a great amount of extra friction, and increased power is obtained by its use. It has this advantage superior to any Pump yet invented, that should any accident occur to the valves, either by being broken or become choked, they can be repaired in a few minutes, without disturbing the Pump. To be seen on the premises, 10, Temple-street, Whitefriars, London.

J. C. has also a large assortment of every description of Pump: Road-side, Garden, Pedestal, Liquid Manure, on the most improved principles, and double-action, for excavation, either for Sale or Hire.

TUBULAR DRAINS IN STONE WARE,
Manufactured by
HENRY DOULTON AND Co.
POTTERS,
HIGH-STREET, LAMBETH.



The only Efficient Mode of Drainage is by Tubular Drains from their form they give every facility for a perfectly free passage.

The material of which they are composed is imperishable, impervious to moisture, and cannot corrode; in addition to which, they are glazed inside.

They can be laid down with more ease, and at less expense, than common brick drains.

Manufactured from 2 inch to 12 inch bore, in 2 feet lengths, with Socket Joints. Sizes chiefly used for House Drains, 4 inch, 6 inch, and 9 inch. Bends and Junctions of all kinds.

These pipes are recommended by Her Majesty's Commissioners of Sewers for the Metropolitan Districts.

SMITH'S SUPERIOR GLAZED BROWN STONE SOCKET DRAIN PIPES, 2 feet lengths, in various bores, from 2 to 9 inches, patronized by the Right Hon. and Hon. Commissioners of Sewers for the city of Westminster. To be had at the manufactory, 72, Princes-street, Lambeth. A stock of elbows, stink-traps, and various shapes always on hand.

N.B. The above are also made without the discharge hole being turned downwards.

CHEAP PAN FOR WATER-CLOSETS,
With Trap in One or Two Pieces.

DOULTON AND WATTS,
LAMBETH POTTERY,
HIGH-STREET, LAMBETH,
LONDON,

Manufacturers of the annexed in superior GLAZED STONE WARE,
Price 7s. 6d. each.

They are of the most durable ware, and are recommended, in preference to iron, account of their

CLEANLINESS AND CHEAPNESS.